

HYGIENE.

PEARLS OF THOUGHT,

by Dr. J. T. Scholl.

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Wise sayings.

I was a dogmatic at 20, an observer at 30, an Empiric at 40 and at fifty I have no longer any system. — S. Borden. How egregiously do men err when they loose sight of facts, and substitute specious argument for observation and experience. — Buchan. If opinion be erroneous it requires discussion that it may be exposed; if it be true, that it may be adopted. Dr. Cooper. Let truth and falsehood grapple. — Milton. To yield to authority would be criminal, facts must stand. Dr. Underwood. Health is the most precious of all things, the foundation of happiness: the science of protecting life and health is therefore the most noble of all and the most worthy of man's attention.

Medical history may be divided into the empiric, galenic and chemical epochs.

Medicine seems to have been at first little else than a collection of superstitions. Ignorant Priests, Magicians and Astrologers officiated as physicians. The sick were exposed in public places to the views of travelers. Remedies were recorded on the pillars of temples and public places. Aesculapius was the first man to collect and put on record all the known remedies of the Times. Hypocrates born in the first year of the 18th Olympiad, reduced medicine to a science (held sway for two thousand years.) The medical school of Alexandria devided into dogmatics

and empirics. Galen was born in the year 131 after Christ, he held sway for 14 centuries. In the year 1493 Paracelsus was born in Switzerland, he was the prototype of quacks, using quicksilver as medicine. He burnt the works of Galen, and in spite of the Elixir of Life what he pretended to have discovered, he died at 48.

The modern practice divides into the Allopaths or Regulars, the Homœopaths, Thomsonians, Nostrum mongers and Botanics. The pure Thomsonians puke, steam and inject their sick.

Dr. W. Beach, studied medicine with Dr. Tidd of Boston and graduated in New York, in 1827 he erected an infirmary. Retarding the Reformed Practice, we have selfintererst, want of honesty, prejudice and ignorance. Solomon says: "Though you bray a fool in a mortar his folly will not depart from him." There is no cure for an ignorant man, it takes a man of sense to judge that what is sensible. Fashion is another potent element. It is to the rising generation that we must look for the reception of new truths. As a watch will go irregularly whose balance wheel has been near a magnet, so will a physician having a favorite theory, bending everything to its support, be laid astray. — It is easy to go with the stream, hard to contend against the current. Prove all things and what is good lay hold of.

To prejudice other men's notions before we have examined them is not proving their unsoundness but our blindness,

Lock says: "New Opinions are suspected just because they are uncommon. Truth like Gold is none the less for being brought newly from the mine, examination must give it price, not antique fashion and although it be not current by public stamp, it is none the less genuine. Friends may flatter, enemies defame, but history will render justice."

1. Diet and Regimen. Dr. Mott says, there are as many suffering from intemperance in eating as in drinking. 2. "I have seen," says Graham, "chronic diseases unbenefited by medicines, yield to a well regulated regimen." 3. Death from old age may be compared to the extinction of the light after all the oil has been consumed, death from disease, to the blowing out of the light while there is yet plenty of oil. 4. Cheerfulness of temper and vigor of body are the offspring of temperance.

To prevent disease is in the power of the individual, to cure them, falls into the hands of strangers who may be ignorant and villainous. 5. Sir Thomas Barnard could mount his horse at a hundred years of age, read without spectacles and sing as he did at twentyfive.

The man of moderation culls the flowers of every allowable gratification while the victim of intemperance drinks so deep as to stir up the noxious sediment at the bottom of the cup; thus are the voteries of Bacchus and Venus worn out with disease before they have arrived at middle age. 10 years of mature life with knowledge and experience are of more value than those of younger years. An elderly man of a delicate constitution leading regular habits, will have a better chance for a long life than a young man with a robust constitution leading a disorderly life. Many people eat too much at once, overstretching the coats of the stomach (and rendering them unable to contract on the contents) giving rise to fermentation, flatulence, listlessness and headache.

6. Rise from the table before you are fully satiated; and of sundry articles, eat in no larger proportion than the stomach is well able to digest them. Many diseases may be cured by diet alone. Abstinence is the best cure for an excess in eating or drinking, abstinence itself must be in moderation since a suspension of function would bring on debility of the organ.

8. Exercise with temperance prove the best cathartics.

The father of prof. Cooper was cured of asthma by eating carrots for two weeks.

9. Food and drink. Animal food is hard of digestion in proportion to the grease it contains. 10. Vegetable food is lighter and more laxative. The Irish who live on potatoes and buttermilk are nevertheless strong. Our forefathers lived to an old age on beanporridge and hasty puddings. The laboring classes of many districts of Scotland and the north part of England are nourished on little else than oatmeal and potatoes. 13. The strength of the salt and coal heavers of Spain and England is amazing, says Captain Chase. The Irish of which subsist on 4 oz of bread and 3 of cheese for a meal; a cask of oil weighing over $1\frac{1}{2}$ tons was carried by 4 of these men. 15. The inhabitants of the Ladrone islands supposed themselves to be the only people of the world prior to the landing of the Spaniards in 1620 and since there were no animals but birds on the island, which were not eaten by them, so they lived on vegetables exclusively and still they were well built and able to carry five hundred pounds. Lyeurgus, Porphyry and Pythagoras used no meat. 16. It is not so much the quantity as the quality of food which overloads the stomach. 17. Arsenius the tutor of the Emperor Arcadius lived to 120 years on bread and water. Romualdus reached also 120. 18. St. Mungo is said to have lived to 180. Thomas Parr 152. Ephraim Pratt 116. A vegetable diet prolongs the period of growth, hence of life. The Pythagorean school issued forth Epaminondas noted for his virtue, Archytas noted for his mechanical skill and Milo noted for his strength.

Many diseases are communicated by eating the flesh of animals. 18. Rousseau says: The peaceful temper of the frugivorous Asiatic contrast strongly with the ferocious carnivorous European. In India the killing of animals is forbidden. In Paris there are four thousand

sellers of oysters, 1,500 oxen and 16,000 sheep, hogs and calves are daily consumed. 20. In the reign of terror in France it was the butchers that were foremost in the massacres.

Bread. Wheat should be ground fine and the bran left in, thus being made into bread it would regulate the bowels and cure dyspepsia.

Tea and coffe when drank strong, make persons weak and nervous. 21. Pastry is hard of digestion. Milk is wholesome, goat milk is easiest of digestion.

Water, should be free from mineral and vegetable ingredients, it should contain no lime and be soft, otherwise it is highly injurious, causing gravel, (goitre, premature old age. S.) Cold water should not be drank when the body is fatigued or heated. Persons may die in a few minutes.

756. Alexis St. Martin a Canadian 18 years of age, in 1822 received an accidental charge of duckshot in his left side removing a piece of the lungs and stomach leaving a hole, so that the whole of one finger could be passed into it. At the end of a year the opening was closed by a valve formed from the mucous membrane which however could be pushed aside with the finger.

757. Dr. Beaumont of the American Army made St. Martin a subject of experiments and found: That the gastric juice was secreted, the instant food was introduced into the stomach; the villous coat viewed with the magnifier, changed from a pale pink to a deep red in hue and the vermicular movement transversely and longitudinally became also excited, and the gastric juice was poured out from the glands. Whenever a feverish condition existed, caused by undue excitement, fatigue, fear anger, overeating or liquors, then the villous coat would be red and dry, not yielding any gastric juice even on the application of a stimulus. 761. After the use of liquors for a few days, the mucous membrane would be

covered with apthous patches and the gastric juice small in quantity, although he did not complain, not even of want of appetite. If however the drinking was continued for two days longer, then the inflammatory spots would take on a livid hue and pour out small drops of grumous blood while the apthous patches were becoming larger and more numerous. The secretion was mucopurulent tinged with blood as in dysentery. Some uneasiness at the pit of the stomach and some vertigo would be probably the only thing complained of. Eating to excess, or swallowing the food not sufficiently masticated would produce similar effects on the stomach. This explains the miserable digestion of the drunkard. Under some influences (probably fear, fatigue and anger &c.) then the membrane would turn pale and moist giving out but a small quantity of gastric juice.

760. The digestion of meat was especially influenced by the minuteness of division and tenderness of the fibre. Animal and farinaceous food were most quickly digested. Digestion in the stomach or chymification was especially determined by the relative amount of food to the gastric juice, then by the state of health and mind, by rest and exercise etc.

257. The relative time for the digestion of different kinds of food is three and one half hours for meats, eggs, oysters, broiled, boiled or roasted, frying will add half an hour to the time, and beef or mutton suet and fat pork will bring the time to five hours; while young and lean meats such as sucking pig and turkey will digest an hour sooner, that is in two and one half hours time. Soups, vegetables and bread digest in the average time. Waterfowls take four hours and tendons take five hours to digest. Fish when fresh, young and lean stand with milk, when long salted near to old beef.

The distention of the gastric tubules gives rise to the sensation of hunger. — The gastric juice first coagu-

lates albumen and next dissolves the coagula.

The amount of food taken into the stomach is generally more than is required for the support of the system, and frequent excess will produce disease. The bulk of the food is also a necessary consideration to satisfy the normal action of the stomach. Exercise elevates, and sleep depresses the temperature of the stomach, in direct ratio to which digestion proceeds.

23. **Liquors.** Strong liquors were formerly kept in drugstores the same as medicines, and prescribed by the physician. Liquors precipitate the pepsin (an albumenoid) within the gastric tubules, causing closure of the orifices and an inflammatory condition of the mucous membrane is the result, ulcers, hemorrhages and finally atrophy must be the consequence. The first effect is morbid excitement, the second scirrhus of the organ. Scirrhus of other organs especially the liver, kidneys, spinal marrow and brain with their concomitant symptoms set in sooner or later.

One dram begets the need of another, till the habit becomes fixed and the victim is finally carried off by delirium, apoplexy, ataxy, dyspepsia or dropsy. A preternatural excitement of any function will determine its premature decay, hence drunkards die before their time. Habits of drunkenness are most frequently contracted from associating with comrades already addicted to the habit. Avoid the company of the intemperate as you would a serpent, the poisoned fang will rankle in your flesh before you are aware of it. He that touches tar will defile himself. The drunkard experiences shortly before the time arrives for his drinking spell, an oppression and faintness so that he is obliged to drink to feel like himself again.

24. A drunkard once asked a Quaker what he should do for his sore eyes, and the Quaker answered: "My friend, my advice is that you put the brandy on your eyes and

the goggles on your mouth. Wine and beer have all their bad consequences. —

Air. Many disorders are due to the air we breathe. In the Grotto del Cani in Italy dogs die immediately, on account of the irrespirableness of the air. A man uses a gallon of air a minute. In houses and churches the air should be let in from above.

28. Our streets in the cities are filthy and too narrow, cities should be built like Babylon or other ancient cities, with wide streets, houses far apart and gardens between them. The dead should be at a distance from the city. Magendie demonstrated that a deadly poison is evolved therefrom even if largely diluted with air.

29. Persons afflicted with lung diseases should avoid the air of cities. Trees and plants are great purifiers of air, they have the power to decompose carbonic acid, assimilating the carbon and restoring the oxygen to the air. Air is as necessary to life as food itself, only draughts, are to be avoided especially by the sick.

Exercise. Without exercise there is no health. 31. Those persons whom necessity compels to earn their daily bread are not only the most healthy, but generally the happiest. Dr. Thomas. Since their wants are few they are strangers to care and solicitude. All those that have attained old age have undergone while young great fatigue and hardships, such was the case with Parr and Jenkins. 32. Nervous diseases belong to the sons of affluence, not to the laborious.

The studious man wants alternate study and exercise and thus secure improvement both in mind and body. Exercise if too violent or long continued will cause an overstretching, and hence be injurious. 33. When the body is heated it must be guarded against rapid cooling, either from cold drinks or a cold atmosphere. Exercise may be active and passive, it is active when a person labors or walks, it is passive when one rides in a carriage

or is pummeled. Riding on horseback or friction with the fleshbrush combine active and passive exercise.

Horseback riding is best for the consumptive, hypochondriac and dyspeptic. Dancing is highly injurious on account of the dusty rooms, cold draught, unseasonable hours and overexercise after the body is already tired from the labors of the day. Dumbbells are sometimes usefull. Friction to the body is indispensable to the weak and paralytic, the morning may be the proper time for it.

35. Every part of the body should receive exercise. 36. Attend to those duties that are indispensably necessary and if they are too great, procure assistance.

(The special activity of an organ is the essential condition of its creation and persistance. Muscle must contract or it will waste away, brain must think or feel, else it will degenerate, the stomach, kidneys and liver must secrete or else they become scirrhus. Alcohol makes the stomach, brain and liver scirrhus, since it precipitates the albumen, endorms the parts and interferes with the function of the organ. Scholl.)

36. **Climate.** The natives of this country got along with very little clothing, while we suffer a good deal from our winters, having a good deal of it.

37. Youth requires less clothing than age. Woolen garments should be put on early in the fall and not laid off till late in the spring. Do not mind the fashions since they are regardless to climate, health and comfort. A tight necklace prevents the return blood from the head, is hence a cause of headache.

Be particular to have the clothes dry you wear by day and sleep under at night. If you get your clothes or stockings wet change them immediately.

25. Flannel may be worn by some persons the whole year through without any inconvenience in the hottest weather. It protects against the sudden reduction of tem-

perature by its non-conducting property. 39. It may be best to wear flannel over the shirt than next the skin, and it is better to wear cotton next the skin than linen which is apt to impart a sense of chilliness; it is thus that linen bosoms in cotton shirts are badly applied, subjecting the chest, which ought to be particularly protected, to chilliness, the body is thus subjected to a double temperature equal to a draught, hence injurious. In order to have the body not become habituated to the flannel it may be adviseable to take it off at night, provided the bed is warm and dry and no chilliness experienced. Persons have often lost their lives by taking off their flannels too early in the spring.

41. **Cleanliness.** Cleanliness is effected by the frequent change of dress and the use of ablutions. 42. The teeth should be cleaned after every meal. The throat should be gargled every morning with cold water. The feet should be frequently washed especially in summer time.

43. Bathing the feet every morning in cold water is said to prevent colds in the head.

Sleep. Too little sleep weakens the nervous system, too much induces stupidity and debility. Six hours of sleep is enough for a healthy person, seven or eight hours should never be exceeded. Sitting up at night and sleeping in the day time is bad, turning night into day and day into night soon robs the blooming cheek of its roses and lilies. 44. The bedroom should be spacious and situated on the sunny side of the house. Avoid late and heavy suppers, and strong tea or coffee as well, before retiring. Too much exercise will prevent sleep as well as too little. Shun hard study by night. Going to bed, banish anxious thoughts and call to mind that there is no use in fretting about what cannot be helped.

44. **Occupation.** Inhaling dust, of whatever nature is very injurious, thus stonecutters, millers and coalmin-

ers are liable to a peculiar kind of consumption. Studious persons have their health impaired by remaining too long in one position, and for the want of exercise. Watchmakers are liable to hemorrhage of the bowels, loss of appetite and flatulency.

46. The mechanic ought to cultivate a piece of ground for out door exercise. — Thinking durst not be continuous, it must be alternate with exercise, the perpetual thinker becomes warped and stupid in a short time. Many of our sons are dying in the shops and colleges, or under the weight of professional responsibility, that might have been spared to a long and useful life, if trained to agriculture or the mechanical arts.

Taking cold. 47. Most of our diseases arise from the sudden transitions of temperature. The system is capable of undergoing a great change of temperature if gradually applied, but when suddenly applied injury must follow. By cold air the body is made to contract. By intense cold persons have suddenly dropped dead, without any symptoms of previous disease. Coughs are most, when the weather undergoes frequent changes, especially when a moist warm air is succeeded by a cold and dry one. The moist air hinders cutaneous exhalations while a dry air will favor it, thus caloric is too rapidly abstracted.

48. Most dangerous are the rapid fluctuations of temperature, when a person leaves a room heated up to 80 degrees F. and goes into the cold air, 10 or 20 degrees below the freezing point; or by laying off a warm suit of clothing for a light one to go to church or to a ball. The system cannot accommodate itself to such rapid changes, and colds and consumptions are the result. Change your clothes according to the vicissitudes of the season, and make the change from one temperature into another very gradually. Avoid a current while you are perspiring as you would an arrow.

Damp clothes. 49. The best constitution is not proof against wet clothes. Wet feet, are often followed by fatal diseases. The night air when damp is particularly dangerous, especially in low districts malaria is brought near to the surface by the dew and fevers and quinseys are the result. Damp beds are especially to be avoided. Beds that are not in use will become damp. Sheets should be exposed to a brisk fire before being put on the bed in winter time.

50. If your bed is damp it is better to sleep with your clothes on. Damp houses are particularly unhealthy.

Evacuations. 51. The bowels should be moved once in twenty four hours. Costiveness will produce a train of diseases among which may be mentioned headache, nervous disorders and dyspepsia. Taking physic for such a state will only aggravate the trouble by debilitating the bowels. Recourse should be had to a proper diet, coarse bread, fruit and vegetables are well calculated to remove costiveness. The belly may also be kneaded every morning with the hand for ten or fifteen minutes. The food must leave a large residue to be thrown off, such is the best stimulus to torpid bowels. A dog fed on bread made of superfine flour died in forty days, while another one receiving bread made from unbolted flour kept in good health. A raw egg with three parts of water taken in the morning is excellent, or even drinking a tumblerful of water. In obstinate cases injections may be resorted to.

The urine. If it be scanty, then there is some derangement of the system which should be looked to.

The skin. Sanctorius an Italian physician drew attention to the cutaneous and pulmonary transpiration which he maintained to exceed all other secretions. Breathing cold air after the lungs are freely transpiring; or subjecting the skin to cold draughts after the skin is moistened with perspiration is apt to bring on inflamma-

tion of the lungs. Drinking cold water has a similar effect. (Myself, while walking fast felt rather warm, pulled off my coat, and walked ahead, but as soon as the cool air (not cold at all) struck my armpits moist with perspiration, I was enduced to cough repeatedly, until I put the coat on again when the coughing ceased, not to return. I was healthy at the time and did not sicken afterwards. Scholl.) A cold bath may kill when the body is perspiring and fatigued.

Baths. 54. A bath is said to be cold when above the freezing point and below 65 degrees F. If the bather feels a sense of chilliness then the water is too cold for him. If reaction does not immediately follow the bath, danger is imminent. Weak persons are rather injured by bathing. Bishop Heber of Calcutta died in the bath, and Marcellus was so prostrated by a cold bath that he died soon afterwards.

55. Bathing the head every morning in cold water is useful in preventing colds and catarrhs. Sir Tobias Mathews says that he was cured of a catarrh of twenty years standing by bathing his head with cold water. Weak eyesights may be benefitted by holding the face under water every morning and opening the eyes a few times so as to give entrance to the water. Dipping the head in cold water is good for nervous disorders. — 56 The tepid bath is below 85 and the warm bath below 95 degrees F. The warm bath is the one that is especially applicable to the majority of persons. Debilitated persons feel strengthened by the warm bath. In eruptive fevers and rheumatism warm bathing is indicated. The hot bath is (where it is above 95 and below 105) seldom useful. A person was placed in a bath of 180 degrees, he fell apoplectic an hour after. — Fourcoy. Peter Frank mentions where a hot bath was followed by a fever and fourteen abscesses. The vapor bath may be extemporized by a tub of hot water, a heated brick and a blank-

et; especially useful in rheumatism and diseases of the skin.

Shower bath. 60. A Shower bath is excellent for hardening the system, fortifying it against the effects of changes of temperature. After the shower bath the body must be rubbed briskly with a coarse towel. All animal effluvias are active poisons, the necessity of ablutions is therefore apparent. The skin holds a close relation to the lungs and stomach. Bathing and rubbing the whole surface of the body, is not only calculated to prevent disease, but also to restore the debilitated, the dyspeptic, nervous and rheumatic. The whole body ought to be daily or at the farthest weekly, washed all over with soft water with some sal soda in it, and then rubbed briskly with a towel until a glow of warmth is felt all over; this may be done in the morning or evening. Persons following this rule will not be troubled with colds and sorethroats. Combe says: "If persons would bestow a part of the labor applied to currying horses to their own skin, with some attention to their diet and clothing, disease would be far less numerous. If a person is covered with a varnish from the perspiration it is impossible for him to remain well.

Mineral waters and watering places. The benefit derived from these places is due to the diet, exercise and change of scenery. The Saratoga and Ballston springs are most noted in this country. 65. In dyspepsia, says Dr. J. H. Steel, four or five tumblersful of Congress water will generally act freely on the bowels when taken before breakfast. From one to two quarts a day may be drank. Under the same circumstances common spring water would answer as well.

Change of Climate. 66. Brazil, and the West Indies are best. St Croix is the best island for consumptives. The best islands are small having a constant sea-breeze with no change of temperature. At St. Croix the

thermometer is known to remain at 80 without change for a long time, is not subject to rains as Cuba is, thus the crops are generally one half.

Sometimes a long ride on horseback, or in a carriage is highly conducive to health, and instrumental in removing obstinate complaints. Sydenham says that riding will cure all disorders excepting confirmed consumption.

67. Sir James Clark, says that change of climate will be of more benefit to those afflicted with nervous disorders.

Dr. S. Torrey remarks on the climate of Florida. "Patients are apt to seek abroad what they might find better at home, an evergreen and ever blooming surrounding.

Tobacco. 68. Three drops of the distilled oil of tobacco put on the tongue of a cat, will kill it in three to ten minutes. A tobacco poultice applied to the stomach caused terrible vomitings. Incessant vomiting followed the application of snuff and butter to the sores on the head of a girl. The oil when applied to an incision in the pectoral muscle of pigeons will cause vomiting and immobility. 69. By smoking and chewing the saliva so useful in the digestion of starchy food, is spit away and wasted; the mouth is thus rendered dry and the pancreas becomes affected with scirrhus and dyspepsia follows in its train. The saliva that finds its way to the stomach is poisoned by the tobacco. Tobacco may cause epilepsy. Cancers of the under lip are generally due to the use of tobacco. Dr. Bonari says: The least evil you can expect is emaciation of the body, feebleness of memory and a bluntness of senses.

Tobacco rather wears down the teeth and by the dryness of the mouth rather causes their decay, than their preservation. 70. Vertigo, blindness and paralysis have been caused by tobacco, (and disease of the heart as well. S.)

The use of tobacco by causing dryness in the mouth is

the first inducement to drunkenness. Tobacco gives a relish for strong drinks. The breath of a consumer of tobacco is horrible to a man of fine habits. — Using tobacco is a waste of money as well, and if a person would put the money thus wasted on interest, in twentyfive or fifty years it would be a nice little sum, and since the tobacco is a further inducement to spend money for liquors, losing money through idleness and sickness, one third of a man's earnings is generally lost through the use of tobacco. A man will use thirty cents worth of tobacco in a week, if he uses cigars he may treble the amount, that would be from fifteen to fifty dollars a year, and concomitant expenses would bring the amount to fifty or one hundred and fifty a year. Getting drunk is left out of the calculation.

Pope Urban the VIII excommunicated all those that used tobacco in the churches. Simon Pauli, physician to the King of Denmark states that tobacco is laid in bog houses by the merchants so that it may become impregnated with the volatile salts of the excrements. Tobacco spinners frequently wet the leaves with stale urine. How delicious that must be! Persons using the pipe are apt to become sots. Tobacco leads to drunkenness.

Tight lacing. 52. A corset tightly laced, being unelastic, allows no play to the ribs to expand and to contract, hence the breathing has to be done with the upper portions of the lungs, are consequently overstretched, become emphysematous or tuberculous, while the lower part of the lungs are arrested in development in company with the bony structure. The heart is also interfered with. Let the young man beware of taperwaists if he does not wish to marry consumption or dyspepsia. The habit of tight lacing can only be gradually laid off.

Hair and baldness. The head should be washed daily with cold water and rubbed with a towel. The roots of the hair may be washed without wetting the

whole of the hair. Dress your head light and cool.

79. Bleeding and taking salts in the spring, should be avoided. A tombstone reads: "I was well; I took physic and died.

Patent medicine. The most foolish preparation is bought with avidity as long as it is kept secret and puffed. In the minds of the ignorant secrecy stamps a medicine with high value. Impostors know this and make use of it. All ills are not readily cured even by the learned physician, the ignorant man deriving no benefit, throws himself into the arms of an unscrupulous quack, to be milked of his money and defrauded of the little life there is left. If you ever see a person who professes to set or reduce a bone where there is no fracture or dislocation, you have before you a shameless interloper and quack.

They pretend to cure with vegetable remedies and resort to mercury in disguise. 81. Nine times out of ten those medicines are either useless or highly injurious. Swain's Panacea contains corrosive sublimate. The Welsh Medicamentum is the compounded tincture of aloes with some aromatics to disguise it, (now it is making its appearance under the name of Hamburg drops. S.) "Dr. Taylor's Balsam of liverwort" a remedy for consumption, obtained notoriety by puffing and forged certificates, Taylor being a fictitious name, and the proprietor though he amassed a fortune died of consumption in spite of his medicine. 83. Why do not the editors of papers expose this villainy? because their interest is at stake and they are rather well paid for it.

The passions. 84. Love, grief, fear and anger. Illnesses baffling the skill of physicians, have been cured by the pardon of sin, while anger has been frequently fatal.

Love may be disinterested and sensual. Spiritual love if it exists, will suspend that of a sensual nature.

86. The passion of love is produced on the principle of association which begets assimilation and attachment. Diseases caused by a disappointed love are of a nervous nature. Hysteria, hypochondria and mental derangement. The cure for such affections would be to mix in cheerful company and traveling. Single blessedness is a stranger to the cares entailed by a large family. "As love and hope are of one birth, so they can but die hand in hand."

Grief. 87. Grief consumes slowly. A mother that has lost her child sleeps profoundly. Criminals sleep soundly the night before they are executed. Silence is better than conversation, but friends are desirable. Religion is a great boon to some. Traveling is very good.

Anger. Anger will cause a return of epilepsy, colic, diarrhoea and syncope. Make an opposite impression upon an angry person, and if reconciliation is probable let the subject be quietly talked upon, and greater friendship will often arise.

Fear. Fear will cause involuntary discharges. The hair is sometimes turned gray or caused to fall off the head by fear.

91. 'Midst changing scenes and dying friends,
Is happiness quite hard to find,
The honey's mixed with gall.

Fear in children is often caused by the foolish stories of parents. A horse will not be afraid of a wheelbarrow or a millstone after he has been fed on it once or twice.

Joy. 92. Joy is most intense when it has been preceded by fear. Joy killed the son of Leibnitz when opening an old chest he found a large quantity of gold. Pope Leo is said to have died of joy on hearing of the calamity of the French nation. Laughter may cause bleeding of the lungs and conduce to a fatal issue. Chrysippus a Greek philosopher died of laughter.

Envy and Malice, lay the foundation of formidable

diseases. Envy is not only directed against one person but also against the friends of that person. Emmet a noted lawyer of New York died after an eloquent speech.

The sick chamber. 95. The sick should be in a different room from the family. The room should be well ventilated, but not allowing draughts to strike the patient. The patient's breath and the effluvia are to be avoided. Never enter the sick room with an empty stomach. Vinegar poured on a hot shovel is purifying. The oilmen of Egypt were spared by the plague. Clear your throat and rinse your mouth after leaving a sick room.

Sir Richard Jebb's rules of health: Exercise and temperance are of paramount importance. Walking is the best exercise, riding next. Liquors, strong tea and coffee are hurtful. Costiveness is bad. Obstructed perspiration causes many complaints. Condiments are bad. Let a regular life be your physician. Never eat or drink what disagrees with your stomach, nor any more than your stomach can well digest. Myself at 107 eat with a good appetite enjoy happiness and sleep soundly. People drink to the health of others and by so doing rob themselves of their own.

What we should avoid and adopt. 99. Avoid salt fish, crabs, lobsters, warm bread, pastry, mince pie, cake, liquor, tobacco, pickles, nuts and strong tea or coffee.

100. Chew your food well, use no hot drinks, and let your meals be about six hours apart and as regular as clockwork. Eat nothing just before going to bed. No naps after dinner. Wear flannel and walk out daily. Wash the body daily and apply friction. Avoid overexertion, fatigue and the ballroom. Be moderate and abstemious in every station of life married or single. Acquire a status of composure of mind and body, and let yourselves not be hurried. Look at the bright side of things and discard envy, hatred and malice.

Remarkable Instances of Longevity.

Isabel Walker, neither lean, nor fat lived to 112 years.

Peter Gardner a tall Scotch farmer lived to 131

John Taylor a Scotch miner lived to 132, sound teeth to the last.

Catherine, Countess of Desmond in Ireland lived to 140. Three times she renewed her teeth.

102. Thomas Parr lived to 152

Kentigern, or St. Mungo, Bishop of Glasgow lived to 185

Henry Jenkins lived to 169

Sarah Rouen lived to 164 and her husband to 172, they were married 147 years.

Petratsch Zorten a cowherd lived to 185

Demetrius Crabowskie near St Petersburg died lately at 188, at 93 years of age he married his third wife who bore him several children.

Thomas Carn died at 207

Bernard Marx of the Town of Belgium died in 1872 at the age of 112, he had served under Napoleon Bonaparte. The learned professions seldom exceed 80 years.

107. An old man said:

“Wine and women I always refused,

Late hours I never used;

I kept my head and feet from cold,

And that is the reason I am so old.”

Bœrhæve: “Keep your head cool, (sober) your feet warm, your body open and avoid quacks.”

Desmolin: — Water, exercise and diet are the three greatest physicians.

Elements of
PHYSIOLOGY AND HYGIENE.
by R. T. Brown M. D.

Wilson, Hinkle and Co. 28 Bond street New York.
1872.

Meat for boiling should be put in the water when boiling. When soup is to be made it should be put in when cold. Potatoes when done should immediately be removed from boiling water, so as not to allow the steam to condense in them and suck in the water. Bread should be made with soda to the flour and muriatic acid to the water.

A person may take cold from passing from a cold room to a hot one, the reaction being too violent. A room should be heated to 65 degrees. —

175. Asparagus, onions and cabbages, lack starch but contain a large amount of Proteine.

Alcohol. All drinks owe their power to Alcohol, be it beer or brandy.

250. Beefsteak that has been macerated for 48 hours in Alcohol is perfectly indigestible. 252. 4 ounces of brandy will at first, for 15 minutes, increase the temperature three fourths of a degree, and then the temperature will sink about three degrees, lasting some hours.

254. When persons after taking the "bitters" are able to eat more than ordinary, so it is the reason that on account of the Alcohol the food can not be sufficiently digested to be enough with the ordinary allowance. Or rather the sensibility of the stomach being blunted, it will not cry "enough" so soon as it otherwise would. It is apt to weaken the eyesight. 255. Through the medium of our sensibility our actions towards others are control-

led, if this is abolished by Alcohol then we have lost control of ourselves.

256. Exhilaration is the manifestation of diminished sensibility? — Exhilaration is drunkenness.

257. Young men think the danger lies in drinking too much, but the danger lies in drinking at all, while thereby selfcontrol is lost and the person is shortly dragged into the habit. Alcohol will produce disease of the brain, on account of the lack of sensations.

258. Alcohol disturbs the mental harmony. The dependence of the intellect and the sensibilities is destroyed and discord is the result. Also social harmony is destroyed by it. Alcohol hardens the brain, and thickens the lining membrane of the air cells.

The want of selfcontrol and willpower in the drunkard gives his life and actions the stamp of vacillation, of uncertainty, of want of selfconfidence. 261. Half the crimes are perpetrated under the influence of Alcohol.

263. Drunkenness lends a powerful hand to gambling and licentiousness.

Tobacco. 264. Alcohol acts primarily on the nerves of sensation. nicotine upon the nerves of motion.

— Tobacco by its nausea diminishes the demand for food and is apt to produce leanness, partly due to spitting. It makes a person unable of deep abstract thinking.

269. Minds not trained to thinking soon fall into decay. The exposure of the nerves of sensation is the cause of pain after burns. Medicines are evils selected to prevent greater evils.

A treatise on the
ART OF BOILING SUGAR.
for Confectioners.

By Henry Weatherly.

Henry Carey Baird
Philadelphia.
1869.

25. Colors that are allowed to be used are: Blues: Indigo, Prussian blue and Ultramarine. Reds: Cochineal, Carmine, Carmine lake. Yellow: Saffron, French berries, Tumeric, Fustic. 31. Lozenges should be dried at 80, and candies at 100 degrees.

34. **On the degrees of boiling Sugars.** Take 5 lbs loaf sugar and 3 pints of water, bring them to boiling until the thermometer indicates 215 degrees, it is now "smooth," boiled a few minutes longer (thermometer at 230) it "threads" when pulled between the fingers; after a few minutes more (thermometer at 235) it "feathers," and at 240 it may be worked into a ball under water and at 252 it "cracks." This is the useful degree for confectioners. At 260 degrees it commences to turn caramel.

37. **"Cutting the grain."** Take two drachms of cream of tartar or a tablespoonful of lemon juice or vinegar added to a 7 lb boil. This is for the purpose of avoiding recrystallization.

Creams are made by adding to the boil when "grain-cut" heated to, 230, fruits, almonds etc. pouring out into tin frames well oiled with salad oil.

Lemon acid drops. To a 7 lb boil "grain cut" boiled to the "crack" 252 degrees, throw on a slab and add six

drachms of powdered citric and half a drachm of essence of lemon, then form into drops.

Lemon barley Sugar. Proceede as with Lemon acid drops, boil to 260 and add a teaspoonful of saffron water.

Barley sugar drops. Same as proceeding. Drop from a pan with lip into powdered sugar.

46. **Honey drops.** A ladleful of honey to the boil after it is a few degrees beyond the "crack." Fruit essence may be added.

Pineapple drops. Same. Use essence of pineapple.

Burnt Almond Rock. To a batch up to the "crack" add three pounds of almonds.

Cocoanut Ice. Boiled to the "feather," add the shaved meat of two cocoanuts.

Cough Candy. Boil to the "crack" color with saffron, add one ounce of acid, a teaspoonful of anisseed and two drops of peppermint; pull it out into ribbons.

Anisseed Drops. As proceeding without the peppermint.

Hoarhound Candy. Use a decoction of hoarhound instead of water when boiling.

Hoarhound Candy. Use seven lbs of brown sugar and one half pint of decoction of hourhound.

Cocoanut Candy. No "cutting." Use slices of cocoanut.

Everton Toffee. Boil a 7 lb batch between the "ball" and "crack" or 224 degrees and then add 1 lb of butter, boil to the "crack" and add one teaspoonful of essence of lemon.

Imitation plum pudding. 57. To a batch boiled to the "blow" add three lbs plums, two lbs of currants, one half lb of (orange) peel, and one half pound of cut almonds. Tie up into wet pudding cloths, hang up until they get firm.

59. **Sponge Sugar.** Boil your sugar to the "caramel" degree without cutting and pour in the whites of two

eggs beaten with plenty of white sugar, stir and when it rises let it fall, continue stirring and when it rises a second time pour it out into a trough, and flavor to suit.

Ginger, Lemon, Rose and Peppermint. 64. No "cutting" is done. Color with saffron or cochineal, and flavor according to name.

Pear Drops, Rose Drops. 66. Half a dozen drops of Otto of roses are sufficient for flavoring.

Sugar Candy. 72. Color batch with saffron or cochineal, boil to the "feather" or 230 degrees. Suspend or cross threads in the trough for crystalization.

Butter Scotch. Is made like the Everton Toffee. Some treacle is used with the syrup and no essence of lemon.

Raspberry Toffee. Use Raspberry jam one half lb instead of the butter in the "Toffee" and boil at first up to caramel heat.

Persion Sherbet. 75. Sugar 14 pounds, tartaric acid five and one half pounds, Carbonate of soda five pounds and Essence of lemon one ounce worked in with the sugar first.

In warm weather sugar has to be boiled higher than in cold weather.

Liquor Bonbons. 77. Figured impression in starch powder, are filled from a dropping pan, with syrup boiled to 230 degrees duly flavored and containing liquors as required, when hardened they are taken out and dried in a stove, and then crystalized in a syrup boiled to 231 for 12 hours, then redried.

Liquor Almonds and Comfits. Made as the proceeding, but before being put into the syrup they are covered first with gumwater and starch powder. In the syrup they are agitated, not left in.

Gum Pastilles. 78. Boil your syrup to 240 when mixed with a strong solution of gum. Drop into starch powder and when they are to be crystalized from syrup

lay a piece of cloth over the syrup in the tins so that no crust may form.

79. Jujubes, pink or yellow. Made as gum pastilles, poured into tin trays, then divided.

Raspberry Squares. The fruit juices are first evaporated and afterwards the sugar added, and poured into pans on wafer paper. Almonds and seeds may be mixed with them.

Marmalades. 88. Take one pint of fruit juices, boil with a pound of sugar and when jellied add one pound of boiled and sliced orange or lemon peel. In making quince or apple marmalade or jelly no peels are used.

Currant Jelly. To one pint of juice use fourteen oz of sugar.

Jams without sugar, Fill the boiled juice into stone bottles, cork tight and heat to 180 in water.

Fruits, Syrups, Cappillaire etc. Boil your syrup to "short" 215 degrees, add one ounce of citric acid and flavor with lemon. For Cappillaire add no acid leave it white and flavor with orange essence. When the fruits are in season, then boil from them.

Lozenges. 99. Finely powdered sugar is mixed with gumwater into dough, roll out like dough and employ starch powder to prevent sticking.

— Seven pounds of sugar take one pint of gum solution.

Peppermint Lozenges. Add two drachms of oil of peppermint to eight pounds of dough.

Ginger Lozenges. 100. Work four ounces of powdered Jamaica Ginger, one drachm of extract of ginger and one drachm of extract of lemon into eight pounds of dough.

Cough Lozenges. Work dissolved liquorice into the paste to make it dark and add four drachms of Ipecacuanha, fifteen grains muriate morphia, two drachms of oil of anise and two drachms of tartaric acid to eight

pounds of the paste.

Rose Lozenges. Add fifteen minims of otto of roses, one drachm of acid and color to taste.

Anise seed Lozenges. To eight pounds of paste add two fl. drachms of oil of anise, cut with oval cutter.

Balsam of Tolu Lozenges. 105. To eight pounds of paste, use two drachms of gum benzoin and one half ounce of tartaric acid. Alcohol sufficient for the gum benzoin.

Cayennè Lozenges. 106. To eight pounds of paste mix one half ounce of thick extract of cayenne and six drops of rose. Octagon cutters.

Chalk Lozenges. Work in one half pound of powdered chalk, and flavor with lemon. Round.

Paregoric Lozenges. One half ounce of Balsam Tolu, one drachm of oil of anise, one drachm of spirits camphor, three drachms of tartaric acid, color with Carmine. Round.

Ipecacuanha Lozenges. One ounce of ipecac, three drachms tartaric acid, flavor with otto of roses. Oval.

Rheubarb Lozenges. Half a pound of Turkey rheubarb, and four ounces of ginger work into eight pounds of paste.

Quinine Lozenges. 108. Add one ounce of Quinine.

Comfits or Pennygoods. The pans are orange shaped, double, so that they may be heated by steam, they are made to rotate on an axis or oscillate. One pound of caraway seeds will make fifty pounds of comfits. The seeds are first grounded with syrup and starch powder, they afterwards require the syrup added in small quantities; when once they are coated with sugar and that supplied continually, they can be left to the action of the pan till completed. Almonds and other articles are done the same way. 115. **Spinning Sugar.** Boil to caramel color and draw the syrup out with forks crossing the threads, to make up the designs of ships, baskets etc.

Gum Paste Ornaments. The gum solution is made from gum dragon. The paste is pressed into moulds, the surplus removed with a knife.

Sugar Piping for Cakes. 117. The icing is made of powdered sugar, whites of eggs and essence of lemon. It is pressed from a cone shaped paper over the cake as designed.

Ice Creams and Fruit Juices. For ice cream take one quart of milk, six eggs, one half pound of sugar, one ounce of fresh butter. Raise the mixture near to the boiling point, but not quite and whisk the same. When it thickens, take it off and strain it through a hair sieve. Flavor with vanilla or to suit, and freeze. When half cream is used the improvement is great.

Raspberry and Strawberry Ice Cream. Use enough of the juices to flavor the cream.

Chocolate Ice Cream. Add four ounces of chocolate to one pint of the sweetened cream.

Coffee Ice Cream. Add a cup of a strong infusion of Mocha coffee to a pint of the sweetened cream.

Tea Ice Cream. Add a cup of strong tea to the sweetened cream.

Lemon water Ice. Sweeten lemon juice, add the white of egg and freeze. Rasp some peels of lemon rind into it.

Strawberry water Ice. Add sugar, water and essence of lemon to the juice of strawberries.

RASPBERRY SYRUP. 127. Let the raspberry juice ferment in a warm place for a few days, then strain, to every pint add two pounds of sugar and boil to 230 degrees. When cool bottle.

CHERRY SYRUP. Made as above.

APPLE PASTE FOR ORNAMENTS. Prepare apple mush and boil it with its equivalent of sugar; color to taste with cochineal. Put into a warm stove for 24 hours, then cut into strips for forming devices.

Female Guide to Beauty.

No. 18 Ann street, New York,

Garret and Co.

8. Tight lacing, causes atrophy or scirrhus of the breasts, or clubfeet in the offspring. 9. The infant should recline horizontally for the first two months. Plenty of exercise, plenty of water and friction of the skin, are the great sources of health from infancy to old age.

10. Swinging cots and cradles, produce disease of the brain and squinting. Give the infant plenty of sleep, milk and flannel, says Dr. Hunter. Narcotics to children cause a sallow complexion. The infant should be well exercised by being carried about and its skin well rubbed at the time of dressing.

11. The infant should be vaccinated in the 7th week. Never allow the infant to go to sleep on the breast, besides suffocation having occurred, aphthæ and thrush often make their appearance from the milk not being swallowed and fermenting in the mouth.

The eye should be shielded from strong light. 12. Juvenile prodigies seldom make great men, a child should not be induced to mental exertions until six or seven years of age.

14. The centre of gravity in the infant is at the navel, in the adult at the pubes, the centre of gravity moves also downwards as the development advances. A child of two years is five heads high, of five years six, of fifteen years, seven; and of twenty one years eight heads high.

15. Mrs Walker says: "Tight lacing is far from improving the appearance of the person, it excites the conviction of an artifice, and a suspicion of its necessity."

18. After confinement the bender may indeed be useful. 19. The position of children while writing, sitting, working, &c. as well as the use of one hand, is productive of deformity. Lying on one side in the bed has the same effect. 20. Shoulder braces for a stoop are calculated to increase the evil, by weakening the serrati muscles whose office it is to keep the shoulders back and which ought to be strengthened by exercise. 23. Mr. Coulson in his work on "Deformities of the chest" mentions that tight lacing produces apoplexy, spinal curvature, scirrhus of the breast, asthma consumption, disease of the heart, liver complaint, premature labor, hernia, contracted pelvis, epileptic fits, a short and sickly life, and unhealthy and ugly children.

25. Mrs. Walker says in her work on "Female Beauty" — "Women who wear tight stays complain that they cannot do without them. The muscles have become so weakened that they are unable to support the weight of the body, and spinal curvature is the result." Beauty is but another name for a countenance of health, intelligence, good feeling and peace of mind. Bad feeling and ill temper show themselves quickly in the face and physical suffering cannot help doing the same. 25. Stays tend to keep the two cavities of the body in a state of immobility thus the motion of the diaphragm is interfered with, hence respiration is incomplete and along with it, goes circulation. The motion of the diaphragm not imparting its motions to the stomach, hence digestion is also deprived of an aid. The muscular motion being interfered with, a wasting of the muscles follow. The stays become to the person accustomed to them: a want, she cannot do without them any more than the drunkard can do without his dram. They have become necessary

for the support of the body, the person is transformed into a crustacean, the spine being useless, gets weaker day by day. 29. Health is the fountain of Beauty. Females require 8 hours sleep from 10 P. M. to 6 A. M. Too much sleep, since it deprives the muscles and intellect of exercise is injurious to the complexion. A want of sleep, shortens life and hastens age. A person has at night a critical perspiration at about twelve o'clock, those that stay up at night will have an imperfect crisis and the efforts of nature are frustrated. 29. To such persons the vivifying air in the morning is also lost. — If you cannot sleep by night draw a long breath and exhale it slowly through the nose, directing your attention to the air rushing out of the nose, or keep looking imaginary at the nose.

30. The position in bed should, frequently be changed from side to side, if the head is too high there will be pressure on the spine and the cartilages become absorbed hence stiffness and a stoop will be the result. The bed should be hard enough to prevent the sleeper from sinking in the middle, a mattras is therefore best to sleep on.

31. The windows of the bedroom should be kept open till sunset. 32. Go to bed at ten, rise at six, before breakfast walk a mile, then use a Dineford's hair glove for ten minutes, wash hands and face in cold water. Damp clothes should be dried before a fire. Breakfast at eight, use coffee and beefsteak, after breakfast a walk with company. Lunch at ten, dine at half past one, no pastry. tea at five, sup at eight, and take an hour's exercise after supper. 33. On rising in the morning the whole body wants to be washed, all over with lukewarm water and a sponge, and gradually use the water colder, when dried use a flesh brush or better a horsehair glove and rub the body for ten minutes. For the back, a hair belt is well adapted. This will make the skin transparent smooth and soft, the muscles hard, the circulation active

and thus prevent coughs and colds. 34. Avoid drinking between meals. In corpulence the fat on the kidneys prevents the play of the diaphragm, thus giving rise to dispnoea and an increase of obesity. Corpulence is caused by indulgence in eating and sleeping too much.

30. Between the liver which secretes the bile and the skin which secretes the sweat, there exists the strongest companionship. If the skin is dry and inactive the liver is so too, there is but little secretion of bile. Bichet found by experiment that during the first process of digestion the flow of bile is diminished and the outlet of the stomach is closed, at this time the perspiration of the skin is also diminished; but as soon as the chyme passes into the duodenum, then the bile also is rapidly discharged and the perspiration of the skin is correspondingly increased. When the skin is dry there is an obstruction of the bile, if it be greasy, the bile is too abundant. Lime water is good for sweaty hands and feet. 41. Tepid bathing is excellent in glandular swellings. 44 Wrinkles are produced by the obliterations of the small bloodvessels, the small streams dry up as age advances while the larger ones become swelled. A natural running down. They can be prevented by keeping the skin in an active condition and wearing the face in a smooth condition, not making grimaces with every motion of a tool or every thought passing through the mind. 46. The small red pimple is caused by hot rooms, violent exercise such as dancing and intemperance of any kind. 47. Dr. Darwin mentions a lady affected with such pimples blistering by degrees her whole face, who not only got rid of the pimples but obtained a fine skin. (I have seen a chronic eruption yield after a boil formed in the centre of it. S.) 48. The worm pimple is due to the want of attention to the skin. The livid buttony pimple, *acne indurata*, should be pricked with a lancet so as to induce suppuration and its removal. 49. The

Bardolph pimple, acne rosacea, is caused by hard drinking. The nose is generally attacked. It is characterized by a collection of small suppurating pimples (of the oil glands) accompanied by a shining redness and a lumpy appearance.

Nettle-rash, caused by acidity or shell fish. 54. Scars can only be prevented by drawing the wounds together with sticking plaster. 55. To keep the hands soft and white put on white kid gloves in the night. 58. The nails require filing every day to keep them of a length. Press back the skin from the nail. Wash and rub the feet night and morning. 60. A large pupil is considered beautiful, but is rather a sign of a weak constitution, apt to lead to consumption. All sorts of spectacles or eye preservers are eye destroyers, they should never be used until it is impossible to do without them, they soon make the magnifying spectacle a necessity. If the eye is weak, cold water is the best lotion, or a teaspoonful of brandy added to two ounces of water. 61. Squinting may be cured by covering the stronger eye, so as to strengthen the weaker one by increased labor.

Teeth. Tartar on the teeth is one of the most frequent causes of bad breath. 63. A good set of teeth is the nicest ornament of the human face, it prepares one favorably for an introduction wherever he goes, they also preserve the symmetry of the face. When the teeth are decayed, the cheeks fall in and cause premature old age. If the front teeth are gone a most hideous aspect is the result. Children should commence early to attend daily to their teeth, thus a good set of teeth would be maintained 99 times out of a 100. Beware of powders or pills containing mercury in any shape whatever. 64. Avoid boubons, and hot and cold drinks. Children lose their first teeth at six or seven years of age.

Tooth brushes. 65. Marine marsh mallow roots make the best tooth brushes especially if soaked in tinc-

ture of dragon blood (1 part to 2). Permanent toothache is often caused by sudden changes of temperature.

Tooth picks should be made of quills, those of silver and gold are objectionable.

Hair. 68. The golden locks so much esteemed by the ancients, were due to the facility with which the painter could manage that color in his picture. Raphael, Corregio and Guido had their hair parted in the middle. 76. The stalks of the bur reed will give an idea as to the structure of the hair. The hair penetrates the scarf skin at an acute angle. 77. The hair should be thoroughly brushed and combed morning & night. The palma christi oil is said to thicken the hair; and Macassar oil is thought excellent. If any ointment is used for eight days for a disease of the scalp it will have lost its effect; in such diseases soap and water should be resorted to morning and night.

A Pomade is made by melting together castor oil, lard and wax in equal proportions and scenting with Bergamotte or Otto of roses.

For **Scurf** on the head take a pint of lime water (Aq. Calcis) and add four ounces of vinegar. Moisten the hair roots with it. 74. The color of the dress should suit the complexion. 75. Bright colors brighten a light complexion. Dark colors would destroy the life of such a complexion and make the appearance like alabaster.

A dark complexion cannot bear light, such would render it lifeless and inanimate. Amber colors, dark green, purple, violet, or even black will answer. A short and stout person does not look well in a short dress with many trimmings and flounces. A tall person is improved by a short dress and plenty of trimmings and flounces. 76. Gracefulness will always have more admirers than fashion. If we place red and yellow side, by side both will appear bluer.

Law Colors do not diffuse around them their own

tints but their opposite. Red diffuses green; Blue, orange. Yellow, violet.

To bring out the full effect of a color it should be united to its opposite. Whites will lighten the color along side of it. Black makes things look smaller. Red is not a favorable color. Orange fatigues the eye. White without lustre is unsuitable, with lustre it is favorable to a light complexion. Black hair by lightening the white of the face heightens the red of the cheeks, and overcomes in a measure a sandy complexion.

Regarding paints; we admire unassisted beauty. 78. Under judicious training the intellect will gain in strength in the ratio that the body does. Macassar oil. 82. Olive oil one quart, alcohol two ounces, five drachms of oil of bergamotte, one ounce of cinnamon powder, and color with alkanet-root. Heat and filter. — To make the hair grow: Powdered cantharides one drachm, whiskey one pint, aq. ammonia two drachms. Alum two drachms, in eight ounces of weak brandy will keep the hair from falling out. — Freckle Wash. Use Muriatic acid one drachm in eight ounces of rain water. — 89. Dr. Withering's Cosmetic Lotion: Cold sour milk and grated horseradish. Freckles: Use a borax lotion. Or: New milk eight ounces, the juice of a lemon, an ounce of brandy and a bit of alum. Pimples are removed by touching them with spirits of turpentine. 86. Plumb's pimple wash: One grain of corrosive sublimate in spirits of wine. Wrinkles: Onion juice, white lily bulbs and honey, each two ounces and one ounce of white wax. 87. Tooth powders. — Starch, chalk, myrrh and cuttle fish bone each two drachms, ginger half a drachm, flavor and mix: — Or: Chalk and rose pink, each one ounce, orris root and peruvian bark, each two drachms, flavor with cinnamon and cloves. 92. Bath of modesty for the complexion: Put of paste of sweet almonds enough to make the water milky. **Virgin milk:** Gum benzoin

and styrax dissolved in alcohol, added to water to make it milky. Cosmetic juice, is lemon juice and candy sugar. 93. **Pomatum.** Lard eight ounces, beef marrow four ounces, scented with bergamotte. Spanish wool or Spanish papers — for coloring the cheeks. 94. Tale white for the face, is purified by vinegar, applied with cold cream to the face. **Cold cream.** White wax 1 oz. neats foot oil two drachms, spermaceti one and one half drachms, oil of jessamine three drachms. Toothache liniment. Spirits of camphor one ounce, aq. ammonia three drachms, oil of bergamotte ten drops. **Spirits Mindererus.** Carbonate of ammonia one drachm, vinegar four ounces. **Lip salve.** Sweet oil and white wax each one ounce flavored with otto of roses. **Barber's itch** and eruptions in the face. Yellow dock and strong vinegar.

Lecons Elementaires D'Hygiene.

Par

V. Cornil, Paris,
Germer Bailliere.

1873.

Hygiene is the art of preserving health. Life is a perpetual combat with the elements of destruction. Hygiene is to instruct us in regard to noxious influences so as to be guarded against them, and to regulate intellectual and muscular action so as to be most conducive to health. (The lungs being a membrane for the contact and action of the air; this may prove that the skin is in part at least a respiratory organ, though infinitely inferior to the lungs. This point might easily be settled by placing a person in oxygen gas, having him respire an air more rich in nitrogen. Scholl). (The inferior organisms made up of single cells receive their nutriment from their exterior medium (water) in which they live; in man, the cells composing the individual depend for their existence and nutriment on an artificial medium, the intercellular lymph, and the skin by means of its epiderm bars off the outside medium, but if the epiderm is removed then the outside medium containing poisons and infectious germs will immediately enter into activity. Scholl.)

12. Air has twenty and four-fifths parts of oxygen per cent, the remainder is nitrogen. A man consumes one and one-half pounds of oxygen per day. 13. A sparrow was placed by Cl. Bernard under a half gallon bellglass, it died in three hours time, if however another

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sparrow was put under the glass at the end of the second hour this sparrow died instantly. This proves the accommodation of the system to a change which is very gradual, and that accommodation is impossible if the change is abrupt. 14. Leblanc's analysis showed that the carbonic acid in public halls was increased from one-half part per thousand to three or four parts per thousand. Ten cubic metres of fresh air are necessary per hour for a man. If a man rises into the air from 1500 to 2000 metres above the level of the sea, he is apt to be taken with spitting of blood or bleeding from the nose. People living at that height as at St. Gothard in Europe, or on the Cordilleras of Mexico are generally anæmic on account of a want of red bloodglobules.

Electricity. Many persons are painfully affected during a thunder storm. The current of hot vapor arising from animals, barns and chimneys is a good conductor of electricity. Caravans and barns are often struck by lightning. 18. It is also necessary to avoid metals, walls and hotbeds.

Light. The sun is the principle light and life giving body. A man living in the dark as in mines becomes pale like a plant in the cellar. 18. The dark skin of the negro and the fair skin of the European are in direct ratio with the intensity of light. The bear, deer and hare are white near the poles. 19. Intense light is apt to bring on ophthalmia or erythema. Sore eyes are also caused by gas light, the yellow and red rays are most injurious.

Animal Heat. All hot blooded beings possess the power to maintain their specific heat at 100 degrees F. by means of chemical changes going on in the interior of the organism. The blood equalizes the heat in its circulation. If a dog's normal heat is artificially raised about eight degrees, he dies: the same is true in regard to man. Under an elevated temperature, the heat is kept down by

the pulmonary and cutaneous exhalations, by the sweat; and where the surrounding temperature is too low, the normal heat is kept up by contraction of the skin, quickened breathing and increased chemical change.

Dryness and Moisture. A man may remain a few minutes in an oven heated to the temperature of boiling water if the air be dry, if however the air be moist a heat of 120 degrees becomes insupportable and asphyxia becomes imminent. This is because the cutaneous and pulmonary exhalations are suspended, and can thus no longer regulate the internal heat: the skin covers with a sweat which will not evaporate. Heat united with humidity causes rapid putrefaction and thus the pavement emits a bad smell. A moderate quantity of aqueous vapor is necessary for to make the respiration easy, especially for persons laboring under pulmonary diseases.

Cold. 23. Cold and dry air is generally well supported within certain limits, and if not continued long. Alcoholic drinks are not good for persons subjected to cold. A light breeze however renders a cold temperature completely unsupportable even if twenty degrees less cold. 24. Parry says: 40 degrees below zero may be borne if the air is still, if however there is a light breeze 20 degrees below zero cannot be endured. — 25. If the air is cold and at the same time moist, it is most pernicious. Low countries, near the ocean, lakes and large streams are moist. Humid cold air (especially when associated with wind) is the cause of bronchitis, pleurisy colds, sore throats, albuminuria and rheumatism.

Poisonous Vapors. 27. Sulphuretted Hydrogen is evolved from decaying vegetable and animal matters, it gives rise to vomiting, headache and sore eyes.

Dust. Dust from coal and stone causes incrustation of the lymphatic glands of the lungs, and thus are miners, needle sharpeners and stone cutters subjects of a peculiar kind of consumption. (To these might be add-

ed millers and thrashers of grain. Scholl). Arsenic causes eruptions of the skin. The vapor of mercury causes a special cachexy. Vegetable spores cause intermittents. The dust from the cotton fibre causes consumption in the factory girl.

Climate. Under climate we mean the temperature, moisture, winds and pressure of the air or altitude. Climates may be divided into hot, temperate and frigid. A climate may also be constant, or variable. Nearness to the ocean ensures a continuous climate, elevated regions a variable one.

31. The hot climates are embraced between the 30 degrees latitude, north and south. Algeria is the type of such a climate. Their winter is like the European spring, the spring is dry, the summer is changeable and tempestuous, and the fall is a season of rain. Such a climate has the effect upon a European settler to increase the pulmonary and cutaneous exhalations, a softness, and a loathing of physical and mental exertions become evident, the appetite gets poor, condiments become necessary as well as a great deal of sleep. The Arabs however are active, though lean, their intellectual functions are quick, they use but little food. — The European must especially avoid the cool night, since the change is considerable, otherwise dysentery, pneumonia and tetanus will be the consequence. — Alcoholic drinks must be positively discarded. The most frequent diseases of the European settlers are: The miasmatic fevers and disease and abscess of the liver. Phthisis also rages among them as well as among the Arabs, and when sent back to their native country sometimes improve. 34. It is seldom that one escapes the pernicious effects of climate for several years. The acclimatization is seldom complete. M. Boudin thinks that Europeans can never be acclimated in a hot country, and never get so far as to establish a colony without fresh accretions from the mother coun-

try. The French army lost in Africa during the years 1836 — 1846, 78 men per thousand on an average, four times as many as are lost in France. The mortality of infants born of Europeans is frightful, the births are below the deaths, so that Europeans have not been able so far to become acclimated as to prosper. Where the mother is indigenious, the infant does well, the same may be seen in Brazil. Europeans can get easier acclimated to a colder climate. 36. Here the people are more robust and inclined to fat, alcoholic drinks are better supported.

Endemics. Palustrial or malarial fevers, in hot climates become pernicious, or cause a malarial cachexy. 37 In some such places the cachexy of the parents is transmitted to the child, which gets prematurely old and dies young. The green color on the surface of marshes may be due to 1000 species of microscopic vegetables and animals. Infusoria, Algae, Diatomes and Dismediens. 38. The moisture of the night air holds the spores in suspension. Disturbing the ground as in making streets may also give rise to fevers. 39. Great heat will heighten the malarious influence. In Algeria the malarial fevers are often pernicious, relapses constant and quinine losing its influence over them. These fevers make their appearance after the great heats and when the water is low, as in June in Algeria and October in France. 41. Typhoid fever is also endemic in the fall, may be due to animal effluvia(?). During the 6 months of the French war, 8000 died of small pox, and 46000 the whole number lost in consequence of the war..

Epidemics. These maladies spread from a focus when they are endemic to foreign countries. Cholera is endemic near the mouth of the Ganges, the pest at the delta of the Nile, and the yellow fever near the mouth of the Mississippi. Vegetable matter is here repeatedly being moistened and dried, thus under the great

heat and moisture a wholesale decomposition especially at low water takes place, giving rise to this pestilence.

44. Their origin is also analogous to that of malarial fevers. In 1832 Paris lost 18,000 persons from the cholera. The emanations from the dejections are the principle agents of infection.

Habitation. 47. The ground for building on, should be pervious to water and arable, so that vegetation may flourish around the house, which gives oxygen to the air. The house should be built over a cellar. The invariable temperature in France, is at 22 metres or 74 feet. The house should have an exposure to the south or southeast, but should be free to access from all sides.

Warming and Ventilation. The carbonic oxide from cast iron stoves is bad.

Light. 57. Gas light is rather yellow and therefore more hurtful to the eyes than the white petroleum light.

Cleanliness. The rooms require frequent cleaning and the bedrooms should be aired every morning.

Causes of ill Health. 59. Ignorance and Moeury may be said to be the greatest causes of bad health. 60. The sinks of houses should be particularly guarded so as not to find their way into the drinking water, or grave accidents will be the result.

For privies the English cabinets are to be preferred. The receptacle of glazed earthenware is kept clean by means of a stream of water from an elevated reservoir and afterwards forming a hermetic closure.

Clothing. 62. Hemp and linen are most hygromic. 63. In a warm climate dress yourself the same way as the inhabitants. Use a large straw hat, or a cloth around the head, and a flannel bandage around the body, against the dysentery. The want of warmth in the infant is due to the want of muscular development and motion. In old age the condition is the same,

Care of the body. 66. The skin is composed of the

Epiderm and the Derm, the former of which is constantly thrown off as minute scales. (As the epiderm is constantly renewed and thrown off again, so it is just the same with the mucous membrane of the lungs, the stomach and the bowels, the biliary and urinary tracts, and likely so with the epithelium, lining the blood-vessels; we may assume that wherever there is a membrane forming a surface, be it inside or out: there is also a throwing off of useless cells. What is thrown off by the skin might be subjected to approximate calculation.

In a week the epiderm may be said to have renewed itself. The decay of cerebral, muscular, fibrous and bony structures must be thrown into the blood-current, and to its activity may frequently the washing away of used up and irritating substances, depend. If we remain long without muscular action we feel depressed; dead cells are accumulating in the muscular and other tissues and thus we feel an oppression, which is removed by exercise.

Where does the blood deposit the remains of the dead cells? — From the secretory organs they pass into the excretories; the liver sends them into the bowels, the kidneys into the urine; but where the blood? The blood throws off its waste from the intercellular canals into the skin, into the mucous membrane of the bowels and excretories, hence the blood channels stand in direct communication with the skin. Would we clean the blood, it must be done by addressing the membranes. What cleanliness and friction is to the skin, that is sufficient and proper food to the bowels, and exercise to the muscular organs. To be healthy is to be a good scavenger.

The skin may be irritated too much by the action of the sun, rhus toxicodendron and spanish flies, so may the mucous membrane of the lungs, the bowels, the secretory organs, the muscular tissue, and the blood channels become irritated by a too powerful application of a

natural stimulus and disease has to follow. All diseases of internal organs are diseases of membranes, just the same as the skin is membrane, and the same diseases are there; as there may be seen on the skin. A chronic irritation will result in hypertrophy, while a sudden and powerful irritation only once applied, will terminate in shrinking and atrophy. A blister applied will cure an erythema, a fatty liver will terminate in scirrhus. Life, is also a waste and repair; food is rapidly passed through the individual, and the time it fills an office in the individual is exceedingly small: just as fuel while it is being consumed constitutes the fire so the consumption of food constitutes the living individual. To eat and to throw off, are the two offices of life and the conditions of health. Dr. Scholl.) 69. The head and hair as well as the body ought to be occasionally washed with soap and soft water. By washing, the lower layers of skin are stimulated to activity, and the secretions of the skin are promoted.

Baths. Bathing and exercise were more frequently used by the ancients. The Roman baths are still models for us. In the hot bath a person loses weight by sweating. The urine becomes alkaline after baths even if acids have been added to the baths. 73. Ablutions of the neck and face as well as of the whole body with tepid or cold water every morning is a great preventive of taking cold; the skin should be well rubbed after the ablutions.

Diet. 75. The environs have now been considered, we come now to the *injeta*. The human body has aptly been compared to a steam engine. Lavoisier says: "Nothing is lost and nothing is made new." The nutriment is either amylaceous, saccharous, fatty or nitrogenous, all furnished by plants. These are consumed by means of oxygen in the tissues and in the blood, liberating heat.

78. **Water** is a universal constituent and makes up two thirds of the weight of the body. The bones contain 13 per cent, the muscles 75, the blood and brain 79.

Milk 88, Lymph 96, and Sweat 98 per cent.

80. Water is the universal solvent and medium.

Salts. The blood contains four and one-half per cent of salt, the saliva one and one-half, the muscles two, the bones two and one-half, and the cartilage two and four-fifths per cent. The salivary and gastric secretions are stimulated by salt.

Lime salts. Phosphate and carbonate of lime make up fifty-five per cent of bone. Grain, beans and meats contain these salts as well as water.

Starch. 82. Rice contains 85 and grain 72 per cent of starch. 84. Ptyaline and pancreatine, change starch into sugar. This shows how essential the saliva is to the digestion of bread, beans and potatoes. **Gluten**, analogous to albumen, is also contained in grain. Bread contains still thirty per cent of water. The bran of grain contains most of the gluten. Gluten bread is prepared for the diabetic. Macaroni are principally made of gluten, made from grano duro.

Sugars. 87. The sugars are still easier of digestion than the amylacea, figs contain 62 per cent, peaches 16, and grain and milk 5 per cent.

Fats. Greasy matters are emulsioned by potash and albumen, the white and yolk of an egg. They do not mingle with water out or in the body and are always surrounded by a special envelop of an albuminous nature. 19. The yellow of the egg, the liver of animals, the brain, muscular and adipose tissue all contain fats. Fats, when introduced into the stomach they are not digested or altered in any way chemically, but they are simply emulsioned by the bile, the pancreatic and intestinal juices. 92. As an emulsion they traverse the intestinal villi in the small intestines and finally get into the blood. The villi enlarge the intestinal and absorbing surface, so as to economize space as is done with the cerebral convolutions. These are called respiratory food.

Nitrogenous food. This is of an albuminoid nature, as gluten, legumen, fibrine, hæmoglobuline, sytonine and caseine. Of an alkaloid nature are theine, caffein, etc. 96. The acid nitrate of mercury causes an intensely red reaction with the albuminoids. By means of oxidation with permanganate of potassa they form urea. 100. The chyme is absorbed by the capillary vessels and lymphatics of the stomach and bowels. Albumen modified so as to be absorbable, is called peptone. 101. Osseine and gelatine are less nutritious. 103. Bread, eggs and milk are complete food in themselves. Bread is deficient in grease and albumen, such may be supplied by adding milk, cheese, butter, lentils and meat. The fermentation of milksugar forms lactic acid, which latter coagulates the caseine.

106. A man can live on bread and milk. In stomach ulcer, milk should be the exclusive diet. A nurse is able to supply 42 ounces of milk to an infant. If the milk of a cow is used for infants it should be quite fresh, since milk undergoes rapid changes. 105. Bad or insufficient nourishment kills most of the new born. The white of eggs contains 15 parts of albumen, and four of salts, the yellow contains 25 per cent of oil. Hard boiled eggs are difficult of digestion.

To secure a good digestion. 106. The food must contain all the elements the body is in need of, it must be sufficiently varied, well masticated and eaten in proper quantity and at specified times. A dog fed on one article of food even if complete, will get poor. 107. Too high living in the adult will cause too much fat. 108. A person will consume in twenty-four hours an equivalent to ten ounces of carbon, one-half ounce of nitrogen — equal to one ounce of Urea. 108. The rations of M. Payen were two pounds of bread, one of meat: peas four ounces and salt one-half ounce. 110. For a man one pound of bread and one of meat will do a day. 111

By Appert's process meats may be cooked and kept in air tight boxes. **Salting** abstracts the water of combination from the meat with the substances dissolved therein, therefore such meats are hard of digestion. **Liebig's Extract** is less nourishing then it is pretended to be. **Milk** can be dried into cakes. **Eggs** steeped in lime water may be kept a long time since the lime closes up the pores. **Beans** may be dried and then pressed.

Diseased meats should not be used. Consumption in cows may be communicated to those that eat the flesh or drink the milk. Chaveau. — Tapeworm and trichina come from the hog.

Pork and Sausages should never be eaten raw but well cooked. Ergot causes gangrene in those that eat too much of it.

Drinkwater. 120. A man uses about a quart of water a day. Water should be airy, odorless and soft. Water containing carbonate of lime one part per thousand, is hard water, and is unfit for use until it has been boiled to throw down the lime. Carbonic acid with water makes it very agreeable. 123. M. Chatin thinks where Iodine is absent from the water goitres become frequent. 125. If water is contaminated with drainings from loose earth, it will contain the eggs of worms and when drank, the eggs will slowly develope into worms in the intestinal canal especially if the person labors under derangement of the stomach and bowels so that the eggs are not digested.

A filter made of sand and charcoal ought always to be had recourse to whenever the water is of doubtful purity.

Water when drank in excess dilutes the gastric juice and thus interferes with digestion, it is also apt to cause too much sweating and consequently debility. When drank cold, the body being heated pleurisy and pneumonia may follow. 128. It is best to take warm drinks of tea or coffee under such circumstances.

Wine is made from grapes, contains from 7 to 23 per cent of alcohol. **Beer** contains when small from one to two, when strong four per cent of alcohol. **Liquors.** Cogniac has from fifty to sixty per cent of alcohol and Absinth has from 60 to 72, the worst of all liquors.

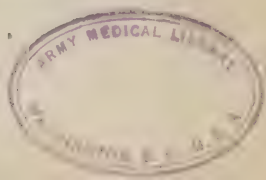
Alcohol in whatever shape it is used will sooner or later show its deleterious effects. The worst is that it enslaves its victim, once under its influence, one is held as unrelentingly as if in the folds of a boa constrictor. The victim labors under a kind of insanity called *dypsomania*. By the by, all at once, the slave to alcohol may be attacked with *delirium tremens*, he trembles, is scared, is pursued, sees rats and serpents. Relapses soon take place and the victim falls into a state of stupidity and general paralysis. Alcohol gives rise to gastritis, congestion of the liver, degeneration of the small arteries and scirrhus of the liver. *Dyspepsia*, *polydypsia*, *apoplexy*, *albuminuria*, *dropsy*, *dementia* and *ataxy* put an end to his career. A small glass of liquor taken before breakfast is fatal in a few years. Coffee and tea, are excellent drinks when the body is fatigued and in warm climates. They stimulate digestion and are the drinks per excellence for the intellectual worker. If taken too strong or just before going to bed, they may make the person restless and nervous. Payen says: "An infusion of coffee, mixed with an equal part of milk and sweetened contains three times as much nutriment as meat soup."

Hygiene of the senses. 141. The organs of sense are a special termination of the nerves. The skin has the corpuscles of tact. The skin has besides feeling, a special sensibility exalted by burns, stings of insects, etc. and depressed by contusions and frictions. 146. The eye is an admirable optical instrument throwing an image of external bodies on the retina. 148. In Egypt, or in hot countries the reflexion of the sun by the ground frequently gives rise to an *ophthalmia* where the eye is

is lost within a few days. Gas light is also bad for the eyes. As age advances the senses depart, hearing and sight are often lost, the latter by cataract, the touch also becomes blunted. Hearing is often lost by detonations, also by the collection of cerumen obstructing the vibrations of the tympanum. The sense of smell and taste have their distinct corpuscles. Taste and smell become blunted by tobacco. **Tobacco** besides acting as a poison, it is apt when used with the pipe to wear away the teeth and to cause them to rot. But the worst of all is that it enslaves its victim. It produces a momentary exhilaration to be followed by a depression. The smoker is obliged to smoke before going to breakfast to give him an appetite, and after breakfast he is obliged to smoke to aid his digestion, thus he is continually a slave to it. Bouisson accuses tobacco of causing cancer of the lip.

Intellectual Labor is synonymous with cerebral labor. When the marmot sleeps the pulse falls from 90 to 9 and the respirations from 30 to 7 per minute. 157. The blood is necessary to cerebral action. Brown Sequard decapitated a dog, and when dead, 10 minutes after he injected defibrinated blood into the carotids of the head of the dog and in two or three minutes the dog would move his eyes when called by name. 158. M. Byasson has found that intellectual labor produces a large quantity of urea.

The muscles are voluntary and involuntary. While they contract a larger quantity of blood is conveyed to the parts, and more ample breathing supplies a larger amount of oxygen, the heat increases, lactic acid and carbonic acid are developed and exhaustion becomes manifest; a part of the chemical action is transformed into labor and the heat is carried off by the sweat. A horse running a few minutes exhales twice the amount of carbonic acid. Laboring animals are never fat. Immobility



is the first condition of fattening.

Sleep and waking. All our functions are intermittent. Every contraction of the heart is followed by a rest. 169. During sleep but little heat is developed and therefore it is necessary to have plenty of bed clothes to keep warm, and not to have the window open by night. Infants want twelve hours sleep, 8 hours are sufficient for the second infancy. The adult needs from 6 to 7 hours while the old man has enough with four or five. 170. Women and persons inclining to obesity sleep more than active and lean persons. In a hot country it is necessary to take a sleep at noon. Remember that the sun is the natural stimulus to awaken man to activity, and darkness the natural sedative to his faculties. Artificial light suits well for feasts, but they are only enjoyed with detriment to health.

Exercise. At first, after exercise a soreness of the muscles will be felt, which vanishes as soon as the exercise is repeated; the muscles growing in size and becoming hard. All the muscles of the body should be harmoniously developed by exercise.

Gymnastics is the art of developing the muscles.

Orthopedics is curing deformities.

Riding on horseback is excellent exercise. It gives great suppleness to the trunk. It is bad for those having ruptures.

Dancing makes persons graceful, but since it generally takes place in halls, which soon become dusty, and late hours, as well as being accompanied with over exertion and getting chilled going home, it is not only injurious but also a frequent cause of consumption and death.

The Athlete's Guide.

By

W. E. Harding, Exchampion-runner.

Dick and Fitzgerald, 18 Ann St.

New York.

1872.

(Gymnastics may be divided into mental and physical (and probably moral) gymnastics; with the development of mind, body and morals for their object. S.)

8. For sedentary persons the importance of gymnastics for developing the muscles is apparent. 10. The young men of the day have physically deteriorated. 11. (The best time for gymnastics is when the stomach is nearly empty and the food digested.) Violent exercise should never be taken right after a meal. The learner should proceed very gradually from the easier to the more violent exercises, and never overtax the powers of the system, or else injury will follow. 12. (The left arm being generally weaker than the right, it should be exercised with dumbbells, weights and suspensions until it is as strong as the other, this is especially important in regard to development of the brain. The nerves passing from the left side into the brain create more powerful centres in the right brain, since the dexterity of a limb depends wholly on the development of such a centre, and the thinking portions of the brain being contiguous receive also a larger share of blood, hence are better able to stand work. Scholl.) Dumbbells should weigh no more than from 4 to 7 pounds. 13. The exercises should be

conducted for the purpose of strengthening the weak parts, not to exhaust them. They should be commenced lightly, then increased to the maximum and then reduced again before leaving off. Sudden efforts are bad. Never carry your exercises to excess. 14. Bad habits as drinking and smoking must be entirely discontinued before commencing training.

Walking and Running. 14. Healthy lungs are necessary, if the person has not these it is useless for him to attempt becoming an athlete in running. In walking the arms should swing freely by the sides, head well up, stomach in, shoulders well back, the body resting on the soles of the foot and on the toes not on the heel and the feet parallel with the ground. 15. The stride should be from the hips and with scarcely any bending at the knees.

In running the legs must not be raised too high and the arms nearly still. Begin running on the toes, and afterwards on the ball of the foot without touching the heel to the ground. The springboard is good exercise. 17. Judicious pedal exertions reach every part of the frame and dispel languor and debility; the brain receiving a larger amount of blood is also strengthened and better able to think. 18. At 5 o'clock A. M. take a sponge or showerbath and rub the body with a towel or flesh brush until a glow is produced all over the body. dress in flannels, place half a pound of lead in your shoes and take a walk at the rate of four miles an hour. Gradually increase the speed as you get stronger. In bad weather practice on the springboard or skipping rope. After such exercises rub the body dry with a coarse towel. 20. Flannel should always be worn next the skin to absorb the perspiration and to prevent a chill. After sweating, while walking warmly clothed for the purpose of taking off the fat, take a shower bath and rub the body briskly. The bath takes away a feeling of las-

situde and fatigue. After dressing keep moving about until the body has cooled down to its natural temperature. Three-fourths of a pound of roast beef with some potatoes will do for a meal, a few days before the race is to come off, no vegetables must be eaten. After dinner an hour's rest is necessary, and then a run or walk may be taken. If you are to run a race of ten miles, then cover this distance one day and next day half the distance, doing so every day excepting the day before the trial, when rest should be enjoined. Short distances should be covered as often as possible. After returning from exercise, rub the body again and change your damp clothes. Never loiter about after exercising, and above all never lie down on the ground. 22. Going to bed wash the feet with alcohol, and rub goose grease into the joints. 23. Two hours before the race a light meal is necessary. 24. **Liquors should be avoided.** A five cent loaf of bread with a glass of water will produce more nutriment than ten cents worth of beer, without any of the evil consequences due to drinking. The hardy hunter of the Alps rigidly abstains from drinks of an intoxicating nature. Tom Sayer says: "When I have any business to do I abstain from drinks, use only water, and I think nothing equivalent to walking and dumb-bells. 26. All drinks owe their effects to alcohol, of this Beer contains from two to ten per cent, Port wine twenty-three, and Brandy and Rum fifty-three per cent.

Benefits of Training. (Without training nothing can be skillfully done, persons must be trained to labor, to practice virtue and to think, the training must always have preceded the successful execution. If a person is not able to do a thing it either argues disease or want of proper training. It is not enough for a person to know a thing, he must also have been in a position to put it into practice. Theory & practice must go hand in hand. Lights and shades make the picture perfect. Scholl.) 27.

Without training a man is not able to run a mile or two in quick time — if he should attempt it he will either fail or injure his health. (I tried the same in chopping wood with Philip).

Foster Powell in 1778 tried to run two miles in ten minutes, he failed by half a minute. Captain Barclay lifted 1176 pounds when twenty years of age — in 1809 he walked one mile for one thousand consecutive hours, that is six weeks. 31. Daniel Crisp in 1818 walked in 17 days 61 miles a day that is 1037 miles, later he walked 72 miles a day for a week. Robert Fuller in 1838 walked 60 miles in 17 hours and 36 minutes. Bradshaw in 1846 walked 25 miles in 4 hours, less a minute. 33. Charles Westhall weighed 138 pounds and was 5 feet 9½ inches high, — in 1858 he accomplished the feat of walking 21 miles in three hours. George Topley accomplished the same feat in 1865. James Miles fell ten minutes short in walking 20 miles in three hours. W. Boyd walked the fastest mile on record in 6 minutes 42 seconds. For running the standard up to this time has been ten miles an hour, 4 miles in 21½ minutes, two miles in ten minutes and ten seconds, one mile in five minutes, one-half mile in two minutes and seven seconds, and 440 yards a minute.

Abraham Wood ran ten miles in 55 minutes. Beteridge in 55 minutes and 4 seconds. 44. Davison weighed 141 pounds, and was 5 feet 9½ inches high, he walked one mile in 7 m. and 22 s. five miles in 38 m. and 40 s. ten miles in one hour and 17½ m. 15 miles in one hour 57 m. 41 s. and 21 miles in two hours. 53 m. and 34 s. Men who wish to be champions must be able to cover 4 yards a second, 8 yards a second in a quarter of a mile race, and 10 yards a second in a sprint. 49. A man that goes into training should have perfect control over himself, so that he does not do too much. 50. It is a mistake to think that the body should first cool down before the

bath is taken, nothing closes the pores but the shrinking of the skin, the bath will do this immediately and without much loss of internal heat, which would slowly escape standing in the cold, or gradually cooling off. Training must be done very gradually, increasing the exertions only little by little each day; especially sedentary persons should be extremely cautious in the beginning. Training increases the size of the voluntary muscles, the functional capacity of the involuntary muscles, and promotes the health and strength of the whole body. While eating, very little should be drank and little cold water at any time. 8 hours sleep is enough for any man. Veal and Pork should not be eaten. 54. No man need be afraid of losing by exercising, the loss will be the more certainly replaced. 55. Sameness of exercise gives precision and dexterity, but variety is essential to vigor and power. Eating more than the body needs is only wasting the digestive powers in a useless way.

Edgar Harding, a Canadian born at Toronto in 1847. In 1866 he ran a mile in 4 m. 18½ s. he gained the title of "Champion of America" when running with de Kelso in a three mile race. In 1870 he made 25 miles in an hour and twenty m. on the velocipede. In 1871 M'clellan defeated him by two m., riding 15 miles on the velocipede. He then retired to literary pursuits.

57. John Howard in the long jump covered 29 feet and 7 inches. Ed. Searles standing level 13½ feet. J. M. Kelley, balloate over 17 horses.

Our resources must be able not only to supply what is ordinarily wanted but something to spare to meet fluctuation. As we must provide in summer, food for the winter, so we must, have our circulation, our breathing, our muscles, and our heating apparatus somewhat above par, but not too much, else the body will be worn out too fast, in order to meet all occasions.

How to Get Along.

Do not stop to tell stories in business hours.

If you have a place of business, be found there when wanted.

No man can get rich by sitting around stores and saloons.

"Never fool" in business matters.

Have order, system, regularity, liberality and promptness.

Do not meddle with business you know nothing of.

Never buy an article you do not need, simply because it is cheap and the man who sells it will take it out in trade.

Trade in money.

Strive to avoid harsh words and personalities.

Do not kick every stone in the path. More miles can be made in a day by going steadily ahead than by stopping.

Pay as you go.

A man of honor respects his word as a bond.

Aid, but never beg.

Help others when you can, but never give what you cannot afford, simply because it is fashionable.

Learn to say "no." There is no necessity of snapping it out dog-fashion, but say it firmly and respectfully.

Stick to one thing.

Have but few confidants, the fewer the better.

Mind your own business.

Use your own brains rather than those of others.

Learn to think and act for yourself.

Be vigilant.

Keep ahead rather than behind the times.

Guide to Health and long Life,

by

R. J. Culverwell, M. D.

**James Miller, 522 Broadway
New York,
1866.**

The ancient Greeks placed health first, then beauty and money-making last. 6. The famous Diana of Poitiers preserved her loveliness by the daily bath, early rising and exercise in the saddle. 7. The most energetic business-men of New York have been lads from the rural districts. The old Greeks had their Gymnasiums as we have our common schools. 10. Unhappily many of our troubles are born with us. Lewis Cornaro being sickly till 40 years of age, regained by observing the laws of regimen, his health, and lived to the age of one hundred years.

11. Health can only be properly estimated after we have felt the bitter loss of it. The great perils of humanity are indigestion and nervousness. The ailments of any part of the body soon affect the digestive organs and nervous system. 17. A greedy child seldom makes a healthy man. 18. The greatest misfortune that can befall the physical and mental development of a young person is personal sensuality; sooner or later he will fall a prey to the quack doctor, who promises health if he is heeded and well paid for it, and who threatens death and raving madness if he is not consulted. 20 It is an ill province to censure, a better one to console and a useful one to forewarn and advise. The young man unless

he is continually forewarned is apt to fall a prey to the influence of bad associates. Ill health or nervousness may be defined, as general bodily and mental prostration.

22. At the period of puberty the young man acquires a relish for convivial society, visits the oyster- and beer-saloons and falls speedily a proselyte to its charms. 25. Although Shakespeare has bid the healthy man throw physic to the dogs, yet for want of timely care many a one has died of diseases or wounds that could have been remedied easy enough if taken in time.

What to eat and drink and what to avoid. 26.

The appetite may be controlled by a determined resolution, (brought about by the knowledge of the bad effects of over-eating, drinking and smoking and by the knowledge of self independence and self control, keeping in proper health, and gaining in knowledge and greatness. S) 28. It is proverbial that mutton is easier of digestion than beef, the latter requires a pretty strong stomach to digest, and one that has feasted on Salmon and is not reminded of it twelve hours afterwards, he must have a good stomach indeed. Of the most simple food one may overload the stomach, therefore it is necessary to observe the quantity eaten as well as the quality of food.

(All strength comes from food but not from the food eaten, but from that what has been digested, absorbed and assimilated in the tissues. What is eaten over that the system is in need of, has to be carried out of the system consuming force and above all the gastric juice uselessly: acting in the same way as the smoker that spits away the saliva, who is getting thin even while he is eating twice as much food as he is in want of. There is also a gymnastics of the stomach as well as of every other organ, but this training to digest every thing must be done most judiciously, a person must feel his way. Every thing is wholesome, but of those articles that are

heavy of digestion, the dose must be decreased and a proportionally small quantity eaten. S.) 29. By eating fast we may eat too much.

(Being in a hurry the gastric juice will not flow in sufficient quantity to carry on the digestion of that what we have eaten even if less than the usual quantity. S.) Three meals a day is enough and they should be at least 4 hours apart. If the grinders have decayed it is necessary to have them replaced by an artificial substitute. Whenever a bad set of teeth make their appearance then we may be sure of having a person with dyspepsia, flatulence and nervousness before us. Such has been my common experience. The food is not properly masticated in this same instant, and soups are not enough to keep a person in active health. The preservation of the teeth is of especial importance. When one tooth is lost its mate will soon follow; and that not being used will present a third tooth going, to which the mate must inevitably follow. S.) 30. Leave the table satisfied but not filled.

(After dinner, as well as before for half an hour persons should be engaged in rather light and agreeable occupations or in conversation, weighty matters must be left to other times, and soon after dinner heavy labor may bring on a cramp of the stomach, As I have experienced myself while chopping. S.) 31. The diet must be proportioned to the habits and occupations of the person, (and is to be in direct ratio to muscular exertions. S.) 32. Meat pies are bad, and so is Pork in all its forms, whether young or old, fresh or salted. Pork chops are night wakers. A mooted question or a disagreeable subject should not be brought upon the tapis at the dinner table. Let them be brought up at a later hour. Try to dine with a good temper, at peace with the world, when the mind is ill at ease digestion cannot go on. 33. Tripe is easy of digestion. Lamb, avoiding;

the fat is excellent for invalids. Stall-fed oxen are less digestible than such as have been free in a meadow. Salmon, eels, pilchards, and sprats abounding in oil are hard of digestion. Dried and salted fish are hard on the stomach. 35. Bread, meat and water are the staple articles of food. 36. Frizzled bacon and hot buttered rolls are apt to bring about a disagreeable digestion. Bread should not be eaten until it is a day old. White bread containing alum put in by the bakers is constipating to the bowels. 37. To make white unfermented bread take 3 lbs. of flour, 9 drachms of bicarbonate of soda, $11\frac{1}{2}$ fl. drachms of muriatic acid (sp. gr. 1.16) and 25 fl. oz. of water.

Brown bread takes one-ninth more of soda and acid. 38. The soda must first be powdered in a mortar, then sifted over the flour while the same is stirred. 39 The weak and bent bones and bad teeth may be attributed in a measure to the fine bread used, being deficient in phosphate of lime. 40. Cakes made with butter, eggs and raisins are hard of digestion. Vermicelli and rice puddings are excellent. 41. Peas, carrots, cabbages, radishes and cucumbers are all hard of digestion. Mealy potatoes are easier of digestion than waxy ones. 43. Too much sugar is productive of dyspepsia. Persons are apt to drink too much. 44. Milk does not suit every stomach. 45. Beer is adulterated with cocculus quassia, grains of paradise and cayenne. 47. Wine interrupts digestion and hurries the food through the digestive tube. 48. The morning dram is exceedingly pernicious. 52. In frying, the meat becomes soaked with fat which is difficult of digestion.

53. If you feel uncomfortable after dining then take one-third less next time. Some persons err by eating too little, the stomach requires a certain bulk to work upon, and so quantity as well as quality has to be taken into account, for a small bit the stomach has to go through

the same routine of motion as for a full meal, to little benefit. 57. The bed clothes should not be piled on so as to cause perspiration since thereby the body would be too much softened, and the head must never be covered with the clothes. 58. In dark weather and long nights a person is more prone to sleep. 60. Walking is the most natural exercise, horse-back riding the most delightful. 61. The time for exercise should be between meals, and three or four hours would be about the proper time. A ride on horseback is a good cure for the blue devils. Exercise cures nervousness, dyspepsia, corpulence and constipation. 61. A person may walk many miles in his chamber, and the use of the flesh brush is a good approximation to exercise. 62. Stand, sit and walk even while poring over your books. Reading aloud will strengthen the chest.

The Passions. 64. To manage well the listless mind is the great art of life. The feelings may vary from erascibility of temper, to ungovernable fury; from mental depression to imaginative misery or despair. Every body should adjust his temper to his circumstances and not allow trifles to annoy him. The mind admits of being trained to withstand the shocks of the world. Be serene, be master over yourself and be prepared for what may come. The leading passion of human nature is irritability of temper, and this is the source of a great many of our discomforts. Endeavor at all times to control your temper. 65. By an irritable temper, you are apt to lose, through a single word, meaning no harm, a valuable friend, or you may strew desolation around, and still no good is accomplished. The young "limb," the "scold," the "termagant," and the "hasty man" will say "I can't help it." But trying and training can help it. Our organization is affected by education and passions may be depressed, or inability may be strengthened into abilities. Virtue and vice depend on cultivation. "Bring

up your child and yourself in the way you should go and when older you will not depart from it." Irascibility of temper ought always to be checked. 66. Acerbities of temper, do no good to others and prove a positive injury to ourselves. A serene and cheerful mind may always be secured by cultivation, even if nature has created us otherwise. Despair is the nurtured and giant offspring of gloom and depression: it is a growing thorn in the heart of man. Melancholy is a state of depression of the feelings, as fatigue is a depression of muscular force. 67. The more we fret the worse we are off, in nearly all nervous affections there is a strong tendency to depression of spirits. The melancholy man knows no comforts except in doling out his misfortunes, he ponders over his imaginative distress, and delights in his woes. There is no use in bottling up grief, out with it. 68. Thinking of one thing continually leads to destruction, the same as a gnat buzzing around a lamp is finally destroyed by it. To cure depression of spirits labor is the most effective remedy. Persuasion, reason and ridicule have no effect upon the desponding man, the dark hour is upon him and he will not be comforted. 69. Nero fiddled while Rome was burning. 70. All morbid excitements such as card-playing, boat-racing or anything else, carrying the mind beyond the usual society are very injurious. 71. Drinking cold water or beer immediately before or after a meal arrests digestion, distends the stomach, cools its temperature proper for work, dilutes the gastric juice and causes a shock of the nervous system. Abernethy forbade his patients, to drink at all at dinner time. 72. Father Matthew is the great Apostle of temperance. 73. Take a warm bath every fortnight or at least every month. 74. In bad weather take exercise in doors. Our first meal should be a fluid one and so should the last. 75. It is advisable not to drink too fast as well as to eat slowly. After breakfast is

also the proper time for the evacuation of the bowels. Constipation is a marked symptom of dyspepsia, it is due to a dry condition of the mucous membrane in consequence of an irritation and this latter may be due to a too dry regimen as well as to an improper one. Many people are always taking pills and lavements to remove constipation, while they ought to make use of proper exercises, judicious diet, and timely and regular attendance on the calls of nature. Habit is also here of great importance. 77. The stomach holds from three to four pints.

Digestion is usually completed in four or five hours but depends very much on health and individual condition. 78. It is best to finish one thing before commencing another. Dr. Johnson thinks that the fecal matters consists wholly of secretions from the bowels and that it is only when indigestion takes place that food or its remains pass through the tube. (It might be possible that the upper part of the alimentary canal is an organ of absorption, while the lower part is an organ of excretion, carrying away from the blood, materials noxious to it. S.) 79. There is as much ceremony in digesting a mouthful as a meal. The stomach has to go through the same process of motion. At dinner only so much drink is to be taken as not to have the meal to dry. 81. Tea may be taken without eating, three hours after the repast. Ten o'clock is bed time and eight hours sleep is plenty. The teeth should be cleaned after every meal and at night before bed time. 91. Shakespeare has familiarized us with the seven ages of man. Dr. Liebig of Giesen in his Theory of Life, and disease assumes a vital force, which is a fallacy S.) and that the body is constantly consuming itself and building itself up.

(The organized body is hence a constantly changing structure, on the one hand it receives, on the other it gives out, and is comparable to a cataract, a rain-shower, or a

fire. The body while living consumes as fast as if it were dead, but while living it is built up as fast as it decays, if the decay is less then there is growth; if it is more then there is wasting going on, or old age sets in. The human body must be looked upon as excluded from air, inclosed in a tube of epiderm, and the development of bacteria in a measure prevented. Supposing this decay to proceed altogether too fast so that the development of bacteria in a high degree take place, then a fatal disease is the consequence. Scholl.)

The body has not a single element in its composition, what it has produced, but it receives the elementary and proximate bodies from the vegetable and inorganic kingdoms ready made and approximates them to itself and after death, restores them to the inorganic kingdom, the great mother of everything there is. Food building up the body is nitrogenous, that keeping up the proper heat is carbonaceous. A man may consume one pound of carbon a day. The quality of the food should vary with the state of the weather. Respiring about two pounds of oxygen a day it is necessary that oxydizable material is found in the blood and tissues derived from the food, else the oxygen will have to attack the tissues themselves. Fasting is hence bad under all circumstances. On water alone a man can live twenty days. 97. Liebig calls health the equilibrium of bodily functions.

(Chemical remedies supply mineral substances such as the body is in need of; phosphate of lime for the bones, iron for the blood, soda and potash for the tissues; or supplying proximate principles, as urea, albumen, syntonine or quinole? the alcaloid of the tissues analogous to quinine, or they are sedative or stimulant to the nervous system; or supplying ferments or chemical solvents as muriatic acid, pepsin, pancreatine, bile and lactic acid. Every organ and system of the body has some substance what will aid it, thus there are two classes of remedies

stimulants and sedatives, every organ requires a different stimulant and a different sedative; words may be stimulants and sedatives to the mind, opium to the brain, pepsin to the stomach, iron to the blood, lime to the bones, and soda to the soft tissues or plasmas. These would point to certain classes of remedies, it being little difference which of the class is chosen. Scholl.) 100. Man thrives only on elements analogous to those of his self-composition. 101. Purgatives form the basis of most all quack medicines, they are at best an evil. Ill health should be treated by diet and exercise. 102. Medical treatment should be supporting and not debilitating in its nature.

The warm Bath. Formerly Saturday night was the time for a general ablution. A warm bath taken before the breaking out of a cold may in the majority of cases be able to arrest it. 105. In all cases of restlessness, fidgets, and hypochondriasis, the hot bath is very useful. 106. The bath may be 98 degrees, but if perspiration is desirable it may exceed 100 degrees. Ten minutes is long enough to remain in the bath.

Vapor bath. Many skin diseases yield only to the vapor bath, and painful joint affections of a neuralgic nature are best combatted with it. It is almost an infallible remedy for a cold.

Cold bath. The cold water cure has made a great stir in the world and is undoubtedly useful in many cases otherwise it could not have been adopted to so wide an extent. The cold shower bath should be taken all the year round to harden the system. Culverwell wrote a book on "How to be happy."

The Atlantic Monthly.

Tobacco. 1861 V. VIII. 696. When the sailors of Columbus returned with the news of a new country they also brought with them a new condiment. As smoke travels as fast as the wind, smoking tobacco soon spread from a few savage tribes to the whole of the civilized world. In the 16th century it was held in great reverence. Gerhard in his "herbal" calls it *sana sancta Sanctorum*, by which name it was used in medicine. In France it was cultivated for half a century for medicinal uses, before any man ever thought of using it for pleasure; and was prescribed up to the last hundred years for asthma, gout, catarrh, consumption, headache and such other diseases as it has been by Dr. Shew accused of producing. In 1686 it first appeared in England and was used in the Indian fashion by handing one pipe from man to man throughout the company. The higher classes using a silver tube, the lower ones a straw and a walnut-shell. In Queen Elizabeth's time the ladies of the court would not scruple to blow a pipe together very socially. In 1616 there were in London over $\frac{1}{2}$ thousand open sellers of tobacco, some of which displayed in front of their doors an Indian, as is done to day by tobacco-nists. In the reign of Queen Ann in 1711, says Steele, the snuff-box was a rival to the fan among the ladies. Dr. Clark in 1793 complained, that the snuff-box was handed around in churches during worship, and that it was impossible to kneel on account of the spitting done. The point of inordinate expense is a very great argument against tobacco. The use of tobacco promotes poverty. The report of the Commissioners of the English University in the year 1850 states that a student's annual tobacco bill amounted to 200 dollars. Dr. Schneider declares in the London Lancet, that the educated Germans

wear spectacles because of their smoking, and that a great deal of consumption is caused by the same means. 700. To aid conversation there is no need to use tobacco, since women using no tobacco are certainly models to men. The use of tobacco must be ascribed to a raw and childish epoch of our civilization. Bacon said: "Tobacco smoking is a secret delight, stealing away men's brains." 701. Individual cases prove nothing either way, some persons have been endowed with such an invulnerable constitution that in spite of errors they will still reach old age, thus Dr. Parr smoked twenty pipes a day and lived to be 78. Thomas Hobbes smoked 13 and lived to 92. Brissiac of Trieste died at 117 with a pipe in his mouth, and Henry Hartz used tobacco from 16 to 142. The offspring of great smokers have generally a weak constitution. Tobacco has to be excluded from insane asylums since it produces symptoms akin to delirium tremens. It cannot be gainsayed that it produces cancer of the mouth. Where weak persons are made insane, there is strong reason to believe that it will injure the most robust unconsciously. The pupils of the Polytechnic school of France using tobacco were far inferior in their attainment, to those that were not using tobacco.

Mr. Solly of England accused tobacco of causing paralysis, and says that tobacco soothes an irritable nervous system, to render it only more irritable ultimately; it is like opium in this respect. 702. Read the confession of an English opium eater. Nine-tenths of the best men of the University were non-smokers. Indians who smoked gave out soonest in the chase. Amiral Dunder and Napir abandoned tobacco when ordered on actual service. Tobacco is incompatible with a studious life. It induces general debility, viciated secretions, softening of the brain, partial paralysis, trembling of the hand, enervation and depression, great irritability, neuralgia

and narcotism of the heart. These ailments are admitted by the friends of the weed, and have not been culled from the opinions of its enemies. 703. Every man using tobacco for the first time is warned by nature by the vomiting induced that he is dealing with poison, a narcotic poison of the most active class. Now poisons may be occasionally useful as it was with King Mithradates and Du Chailla who swallowed after the fatigue of the gorilla hunt 2 ounces of arsenic with decided benefit; but generally employed, poisons can not but do serious injury. Poisons may answer in pathological or in special cases, but not in physiological or general cases. Their use should hence be but exceptional and not habitual; and their whole value lies in the rarity of application. If a drug is habitually employed it loses its specific action. Dr. Holmes has forcibly expounded that every medicine is in itself hurtful, and can be useful only when rightly applied against diseases. 704. The largest consumers of tobacco are city rowdies and college students. Now when the rowdy advances to a prize-fighter and the college student to a prize-oarsman, they both drop tobacco immediately. Training and tobacco are incompatible. The increased attention to physical training at the present day appears strongly against tobacco. Cambridge students have by one-half discarded it.

Tobacco is king no longer.

**A popular treatise on the
Skin and Hair.**

By

Erasmus Wilson.

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1854.

The first bath was established in Liverpool in 1843. XII. The skin is the greatest medium for purifying our bodies. XIII. The skin being an organ of sensibility, if it be weak the person will belong to the nervous type. He will be affected by every little change of temperature and finally become a barometer. If a horse becomes meagre and weak it is attributed to the want of grooming, but in man such a thing is never thought of. 25. The mucous membrane when exposed to the air will become skin. Law, 1. A disease affecting part of a membrane may spread to the whole of that membrane. 2. A disease of the mucous membrane may spread to the skin and vice versa. 3. A disease of the mucous membrane may be translated to any part of the skin and vice versa. As an illustration we have erysipelas spreading; eruptions on the mouth, when the pulmonary membrane is inflamed, and rashes when the stomach is disordered. The use of scarf skin is to protect the body against the action of poisons. 8). 27. The scarf skin is originally a colorless liquid, in which form granules and finally cells of one-sixthundreth of an inch in diameter. Next these cells become parent-cells, being brought to the

surface and drying they form the scales of the epidermis. On the scalp these scales form the scurf which is natural to the head. 32. In youth and health the skin has its maximum elasticity therefore wrinkles are absent. By repetitions of muscular contractions of the face, wrinkles will form in harmony with the interior working. If the grosser faculties predominate, then the mark of Cain will soon be set upon the brow. 33. The skin contains 5 per cent of gelatinous matter, 1 per cent of salt, and the rest being albumen. Olive colored spots on the skin are best removed with lemon juice. 35. The color of the skin is in direct ratio to the action of the light. In the Negro it sometimes happens, that a part of the skin or even the whole ceases to secrete coloring matter, and in that case we have a black Albino. In India and in South America spotted skins are frequent; with us the reverse is frequently seen, freckles and liver spots.

Nails. The sensitive skin giving support to the nail is formed of vertical longitudinal folds. The nail has vertical plates to be received by the folds. These vertical plates are best examined on the inner side of the hoof of the horse. 38. The lunula is a part having only longitudinal ridges and is poorly supplied with blood-vessels. Beyond the lunula the nail is received for about one line in a fold of the sensitive skin, the same way as the lamina of the nail are embraced by it. The nail is thicker at the free end than at the lunula, as it grows the horny plates are gradually raised out of their sheaths and the original depth is maintained by new additions from beneath, and the nail is thus pushed forward. 39. Dr. Bean found the growth of the nail to be two-fifths of a line a week, the thumb-nail being eight lines it would take twenty weeks to renew itself. The large toe-nail requiring four times as long to grow and being nine and one-half lines in length, it would take about 2 years to renew itself. 40. The care of the nails should be

limited to the scissors and ivory presser, agnails are thus prevented. For stains on the nails use lemon juice. 42. During the continuance of every constitutional disease, the nails as well as the teeth and horns in animals are arrested in their growth, hence the nail of that part what is growing during an illness will be much thinner and present a line of depression in front of a ridge. Persons show on their teeth a record of infantile diseases, and by measuring the distance of the depression and its extent the duration and time of a disease may be approximately made out.

Sensitive Skin. 44. This is divided into papillary layer and corium. The corium is made up of small fibres collected into strands interwoven with each other forming an elastic web, its meshes may be somewhat less than a line on the deeper surface, and more close above. 45. Large meshes situated deeper are filled with fat, adding to the elasticity of the skin. The fibres making up the skin are of four kinds. 1. White and melastic. 2. Elastic, yellow and brittle. 3. Elastic, strong and of a reddish color. 4. Contractile not elastic nor strong, giving rise to goose-skin, they are muscular in their nature. 8.) 47. The bald skinned animals have the thickest skins, the feathered tribe the thinnest. Watery pimples occur on the inside of the limbs, scaly eruptions on the outside. The papillary layer is in harmony with the law of animal organization namely multiplying surface for the increase of function, thus the papillae are elevations composed of minute capillary bloodvessels and a minute nerve which are sometimes bent upon themselves, to heighten the function. 50. The diversion of the blood from the skin to the internal parts may give rise to diseases. The venous disks are biconvex while the arterial are biconcave. Ruysch came to the conclusion that the whole body is made up of bloodvessels. 52. The number of air cells in the lungs have been estimated

at 1,744,000,000 and their lining membrane at 1,500 square feet. One-fourth of the venous blood is distributed to the capillaries of the liver. The kidneys and skin may be styled the purifiers of arterial blood, while the liver and lungs are the purifiers of venous blood. Dr. Weber found the sensation on the points of the fingers to be able to distinguish two points if separated one-third of a line.

The perspiratory system. 60. The perspiratory apparatus consists of cylindrical cork-screwlike tubes which in the corium are coiled upon themselves, forming a globular ball. These tubes are a continuation of the three layers of the skin or an involution of it. 62. In the palm of the hand the pores are three and one-half thousands to the square inch of about one-fourth of an inch in length, which together would make a length of 73 feet. On the heel the pores are two and one-half thousands.

Two and four-fifth thousands would be about the average number of pores per square inch on the skin, making a length of about 28 miles for the whole body. The number of square inches on the human body are 2,500 or about 15 square feet. The perspiratory apparatus is the regulator of animal heat. Canines do not sweat. 64. In Asiatic Cholera the heat may sink to 77 and in typhus it rises to 110 degrees. When the temperature falls below the normal temperature, respiration and circulation are increased and consequently the chemical processes. 65. A man subjected to 120 degrees for 15 minutes showed a temperature of 105 in his mouth. Sir Charles Blagden supported a temperature of 260 degrees for ten minutes. When animals die from heat, the blood is found in the peryphery of body, the heart being empty. Animals die below 114 degrees, and in moist air much sooner. When the air is moist evaporation is checked. 66. A gentleman vis-

iting the baths of Nero nearly fainted, pulse 120, (heat of air over bath 120 degrees,) and had bleeding from the nose. In dry air he could bear a temperature of 167 degrees. 67. Lavoisier and Seguin estimated the sweat to be 33 ounces in 24 hours, 1 per cent being solid matter. The solid matter is made up of osmazome, lactic acid, salts and animal matters. 68. Bequerel and Breschet covered a rabbit with varnish, the temperature fell rapidly and the animal died in one hour and a half.

The oil glands of the skin. The oil glands are straight and of a greater diameter of tube than those of the perspiratory glands. In the palm and sole they are absent and very numerous about the nose, head and ears. 75. On the head they furnish the pomatum of nature; on the eyelids they are called Meibomian glands. The secretion contains a large portion of albumen. The epithelial cells of these glands, become overfilled with fluid, then they burst and pour out their contents to lubricate the skin or oil the hair. The scales left by these cells pass along the tube and form the scurf. 76. Dr. Simon found in the oil tubes the *Steotozoon folliculorum*, abundant about the face, one forty-fifth of an inch in length. (The use of this oil is to reduce the temperature of the skin in summer, to keep it soft, and to protect the system against the introduction of poisons. Scholl.) 78. Secondly it may carry off noxious matters from the blood. The secretion is sometimes used as a perfume, as is the case with musk.

The hairs. They are analogous to the scarf-skin and come off with a blister. 81. The hair sheaths are formed of an involution of the skin the same as the oil and perspiratory glands. The three glandular tubes are formed the same way by growing inwards to the required depth. 82. The hair when it has grown to a certain length is cast off and a new hair grows from the same tube, cutting them cannot prevent this. 82. The hair

of women is about twenty inches in length and 6 or 8 oz in weight. When hair is closely shaven it becomes persistent and grows about one and one-half lines a week.

88. Hans Steiningen was killed by stepping on his beard going up stairs. As the hair begins to grow from the sheath it is at first small, then increases in size, gets smaller and finally drops. After a rest the sheath begins to send forth another hair. 84. Hairs range in size from 1-1500 of an inch to 1-400 of an inch. 85. The hair of women is coarser than that of men, but the hair varies considerably on the same head. 86. Flaxen is the finest hair and black the coarsest. Gray hairs are coarser than the others on the head. It is very thin in the scrofulous. Withof found from 6 to 7 hundred hairs on every square inch of the scalp and counting 120 square inches would make 90 thousands on the whole head. A thick head of hair may have 100,000. 88. The formation of a shaft of the hair is identical with that of the scarf-skin. (The basement membrane of the hair tube proliferates cells which passing up in the sheath, and being watery form the bulb of the hair, when this gets older it shrinks and forms the hair. Scholl.)

The perypheral layer of the hair is continous with the scarf-skin. The pigment is contained in the inside cells (which are a continuation of the Rete Mucosum. S.)

hair 89. The ~~brain~~ like the skin gets darker as we approach the equator and vice versa. Blumenbach made the color of the hair the basis of his classification of the races of mankind. 90. Of old, persons who were found guilty of sacrilege were flayed alive and the part taken off nailed to the church-door. The cells within constituting the shaft of the hair have an arrangment, as the grains on an ear of corn, supposing several layers to be supperposed. The outside scales of the hair are imbricated as the down on a feather. A feather is an illustration of a hair. 92. A hair may support a weight from 4 to 8 ounces.

A hair ten inches long will stretch to thirteen inches. The grey hair of a mouse is made up of colored and uncolored cells alternately. 94. The imbricated outside layer of cells are the cause of irritation felt by the skin by wearing woollen garments. 96. Sometimes the hair becomes impacted in its sheath, this will produce violent itching, and when the hair is unable to get out it will curl itself in the sheath. When the skin contracts about a hair tube, the hair assumes an erect position called goose skin. 98. The downy hairs seldom appear above the level of the skin. Impacted oil tubes may contain twenty or thirty of these downy hairs. 99. Ruggieri published in 1812 the case of a female 27 years of age covered from her shoulders to her knees with long black hair wooly like that of a poodle dog. At Burmah a man was seen covered with hair all over, on his breast it was four inches long and on his face, ears and nose it was 8 inches long. 101. On the head the hair radiates from a single point, the crown. 102. On the trunk of the body there is a centre of radiation from the arm-pits, two lines of divergence, one passing on the front of the chest and the other downwards to the front of the hips. 103. the hair contains sulphur, lime, silex, oily and animal matters, iron and manganese. Gray hair contains a large amount of phosphate of lime. The hair is very hygrometric, as soon as the air is moist it will swell and straighten, if the air is dry it will curl. The hair will straighten when the curly head is out of sorts. The curling property of the hair is due to the flatness of the shaft. 105. St. John says: "my beard which in Europe was straight and silky, began to curl on my arrival at Alexandria." To the dryness of the air of the country may be ascribed the wool of the Negro, which is rather finer than European hair and no different from the curls of St. John's beard. 106. Hair is also highly electrical, and in headache the hairs may be repelling

one another. It is also a great equalizer of the temperature of the head. The eyelids and eyebrows guard the organs of vision. Also the hairs in the nostrils and ears defend them from the intrusion of insects and dust. 108. The mustache is a natural respirator especially in sandy districts, when travelers are in need of breathing through it. The beard is a great preventive of colds and sore-throats. 110. Moreau mentions the case of a lady who was cured of a mania by cutting her hair. The hair assumes a rapid growth in disease of the lungs, where respiration is interfered with, as in consumption, the long and silken eyelashes and streaming hair of the consumptive are well known. 113. The hair coming out in the winter are white, that in the summer darker. 114. Mary Antoinette and Mary Queen of Scot's hair turned gray in a short time from grief. Sir Thomas More's hair turned gray the night before his execution. Don Diego Osorius a Spaniard, being in love with a lady of the court, was sentenced to death on account of his private conference, and when he heard of his sentence, he was so terrified that his hair turned gray that night. When Caesar saw him next day in such a plight he pardoned him. 116. Lemming turn white in the winter season, but when tamed and housed retain their usual color. A Scotchman's hair became black in the latter years of his life, aged 110 years. 118. Dr. Bruley mentions a lady 60 years of age dying of consumption, wearing fair hair transparent as glass, turning jet black four days before dissolution. The hair bulbs were gorged with black pigment, while a few of them remained shriveled and white. Hair growing on scalded or galled portions of the skin is generally white.

The Health of the Skin as influenced by Diet.
 120. A disagreeable feeling of temperature of the skin is a warning note of mischief within or without. 121. A great rule of health is to maintain a genial tempera-

ture of the skin; by **food, raiment, exercise and ablutions**. Every thing above this is **suspicion**, every thing below it is obnoxious and dangerous. Dr. Prout has classified food into the Aqueous, (saline S.) Saccharine, Oleaginous and Nitrogenous classes. Milk is food prepared by the hands of nature, it is therefore a prototype of what food ought to be and it contains all those principles mixed in due proportions. 123. Food is healthy in the proportion that it contains available carbon or hydrogen, should we wish to increase the heat of the body, then we make use of fats and oils, should we wish to diminish it then we may make use of hydrates (sugar and fruits.) 125. Montaigne says: "whatever I eat with appetite does me good, and whatever I eat with dislike is hurtful to me." 126. Some persons are affected with red blotches of the face and neck after swallowing red pepper even if unknown to them. A variety of dishes is often an inducement to cram the stomach. 127. Do not eat what disagrees. After digestion is completed an acid liquor remains, this is neutralized by taking tea or coffee three hours after the meal. ? (As even an acid bath may produce alkaline urine, so may the simple drinking of water or tea produce an alkaline condition, acting as an internal bath. Possibly drinking large quantities of water in rheumatism might be equivalent to the administration of alkalies. Scholl.) 128. Tea or coffee should be used as a beverage and not associated with eating bread and butter. 129. The child is father to the man physically and morally. 130. A change of food is to the stomach what a change of air is to the general health. 131. Sameness and improper food is a fertile cause of disease in children. 135. Existence would be impossible without salt.

Clothing in its influence on the skin. 133. Clothing prevents the dispersion of the heat of the body, which it does by retaining in its meshes atmospheric air.

134. Our garments retain a stratum of warm air near the skin, and as the external temperature diminishes we increase the numbers of layers to our body. Going into the cold air we should put on additional clothing a little before we leave the warm room so as to confine warm air to the skin. Putting on chilled garments from a cold room is exceedingly dangerous.

(The warmth of clothing depends not on the material itself, but on the quantity of air it is able to confine in its meshes, wool is warm in the degree that it is fine and curly and thus able to retain air, not by any degree of non-conductibility per se. Linen is cold because its fibres are straight and smooth so that they may lie close together and exclude the air from its fabric. Cotton stands between. Silk approaches wool on account of the exceeding fineness of the threads it is spun of by the silkworm, and since each thread is round a quantity of air must be between all of them. Scholl.) 135. Thick textures are warmer than thin ones because of the many strata of meshes being brought together allowing no disturbance of the internal ones by the external atmosphere. The skin is a natural felt.

Linen. The flax fibre is round and pliable, it is therefore not able to retain much air and is hence capable of carrying off the heat of the body, it is a good radiator, and on account of its forming capillary tubes it is very susceptible to the action of moisture, and in virtue thereof reduces the temperature of the body. 137. To prevent the chilling of the body, a woollen garment should be worn outside of the linen. (When bathing fell into neglect, linen was introduced to absorb the sweat and excretions of the body, and a frequent change of linen is a partial substitute for bathing which is now-a-days too much neglected. Scholl.)

Cotton. The cotton fibre is already more twisted, than flax fibre, but it is flat and having sharp edges, apt

to irritate sensitive skin. Thus we avoid to apply cotton to wounds, and prefer linen.

Silk occupies the third place above linen. Its fibres are round but on account of their minuteness they are able to contain considerable air and has less disposition to absorb moisture than cotton, being of a gummy nature.

Wool on account of its imbricated scales is very irri- tant to sensitive skins, and brings on frequently an erup- tion of the skin especially when new. By wearing linen underneath this may be avoided. In this case the linen absorbs the moisture of the skin and the wool keeps the linen from conducting away the heat of the body. Wool on the skin is not able to keep the skin as clean as linen would. 139. Black clothes absorb the heat and con- duct it onwards better than white ones. White is good for summer and winter, in summer it keeps the heat from going in upon the body, and in winter it keeps it from passing out. Franklin spread black and white cloths on snow, under the white, the snow was melted least. 140. Stark says that the difference between black and white clothes is 25 per cent. India rubber shoes and clothes are bad since they confine the exhalations from the parts, and subject them to chills.

Summer and winter constitution. (A man may live under the tropical sun and arctic ice equally well. But the one has a summer constitution, the other a win- ter one. The change from one climate to another can but be gradual, the constitution has to undergo a cor- responding change. The constitution of the Esquimaux is to produce heat, that of the Negro to carry it off. S.) A temperature of Zero feels agreeable to a mariner of the arctic regions. 143. Dr. Edwards of Paris placed 2 sparrows in February from a warm room into a cage sur- rounded by snow and ice, and at the end of three hours only two degrees of heat were lost. While four sparrows

in the month of July placed under the same conditions, lost 21 degrees of heat. The poor among the ancient Britons painted their bodies and went naked. Smollet says: "The Indians on Terra del Fuego go also naked."

144. Sickness will have the same effect on man as the summer constitution, it reduces our power of generating heat, and subjects us to taking cold, and it is under these circumstances that we should put on more clothing. (Not only indigestion or disease will render man subject to taking cold, but also mental emotions of whatever nature, either by arresting the development of caloric or arresting its source, that is properly digested food. Scholl.) If we neglect dressing warmer on such occasions then the internal membrane will become more congested and the illness aggravated. A man used to a warm room in winter time has the summer constitution and is unable to stand cold. 145. The rich have 1-8 the mortality of the poor between the ages of 80 and 90, below that age it is nearly one half. 146. Infants are not able to stand a cold temperature, Puppies left lying with their mother showed a temperature of one or two degrees below that of the parent, if however removed therefrom they soon cooled down to within a degree of the surrounding atmosphere. The deaths of infants born during winter time is nearly doubled. One-sixth of these deaths being from inflammation of the lungs. The mortality of infants the first year is 19 per cent in Paris, 22 in Philadelphia, and 21 in St. Petersburg. The same holds good in regard to the aged, they are unable to withstand cold although from blunted sensibility they do not feel it so much. The winter season is very fatal to the aged. 147. Kitchener says: "When the thermometer is below thirty the proper place for the aged is the fireside." There can enter into the minds of parents no more baneful notion than that of hardening children by subjecting them to unnecessary cold and without sufficient

clothing.

Draughts. Edwards says: "A hand at 98 degrees immersed into water at 41 degrees lost in 20 minutes 43 degrees of temperature, but at the end of an hour and one-half it had recovered only 14 degrees of its heat, it would hence at this rate require 5 hours for the hand to regain its temperature. 149. From a single part, let it be a hand or a foot, the cold will gradually spread until the whole body is chilled through. This explains why persons having their hands in cold water, or the feet cold from wet stockings, or a cold current of wind blowing on a part of the body may take cold.

Check of perspiration. This is rather an effect and not a cause. The primary action is a cold medium carrying off the caloric, thus causing contraction of the cutaneous vessels, throwing the blood upon internal organs.

(Cold water applied to the back of the head will produce pharyngitis; to the feet, lumbago; to the belly, kidney disease; to the cutaneous nerves of the face, toothache; and to the neck, tonsilitis. Thus every portion of the skin has a corresponding internal membrane what may become affected from an impression upon it.

Exercise in its influence on the health of the skin. 151. Well directed exercise promotes the general health. Hufeland says: "Joy is one of the greatest panaceas of life; and laughter, its external expression, is one of the most salutary movements.

(The health and vigor of the body will be in direct ratio to the mental status. If a person is hopeful and hilarious he will succeed in getting his body into a high stamina. Is despondency ruling, the person will only be capable of a low degree of stamina. What passes beyond this degree is fatigue, therefore the person having no ambition is soon tired out and overcome with what would be play in the hands of one that is pushing ahead.

The hunter feels no fatigue while pursuing a stag, while the indolent kitchen girl gets tired from washing dishes. Scholl.) 155. Exercise or labor to be beneficial wants to be undertaken under a cheerful mental disposition. (Cheerfulness will assist, keep up, strengthen and help, while despondency will depress, consume strength, and retard. Scholl.) Retired persons may tug the dumbbells or drag their legs along the avenues, but zest being wanting, they derive no benefit from their exercise. A person that knows himself may be able to know when he is in want of exercise, he is tired of sitting, he feels oppressed at the chest, heavy at the stomach, cross, and wants to be out. 154. Another condition of exercise is that it should be **moderate**. It is with this as with every thing else, it must not be overdone. 155. Our first walk should be short, and the succeeding ones gradually increased until we feel that our exercise is enough to keep us in good health and spirits. The same rule holds with our appetite, "enough" should never be exceeded. Household duties are rather too irksome to pass as exercise, a walk in the fresh air with agreeable company would be far preferable. A person should exercise at least one hour every day in the open air about three hours after meals. 156. Hufeland says: "Fresh air is as necessary to health as eating or drinking." By getting used to out door air the great sensibility of the skin to the slight changes of temperature is overcome, and liability to frequent colds obviated. Another important advantage of out-door walking is that looking in the distance the eyes are thereby strengthened, and premature weakness of the eyes obviated. Hufeland thinks that the four walls of the sitting room are the great cause of weakness of vision. The time for exercise should be towards noon in the winter time, and towards night in the summer season. The morning air of a cold winter's day is too cold for the soundest lungs, the evening air of

summer is apt to be damp and malarious. Exercise should never be taken immediately before or after meals. 157. No two actions requiring a large amount of nervous force can go on at the same time. Hence muscular motion, and secretion from the various glands are incompatible. In order to have food digest, the body must not be occupied with active exercise. (In the year 1851. I went chopping wood right after dinner and before I had chopped 5 minutes at a tree I was seized with cramp of the stomach, and a feeling of malaise at that region, so that I had to quit and go home. Light exercise if not of a tormenting nature is highly conducive to a facile digestion, shaving ones self, going out, making arrangements etc. while hard study should not be undertaken until digestion is in full play which takes about 15 minutes or half an hour; in that time all the gastric juice has been secreted, and then digestion will proceed independently. There is also no use in idling away 3 hours of time as Abernethy would have it. Scholl.)

Walking out, the person ought to be clad according to the weather, and the walk in view. Dr. Harwood fed two pointers at the same time, one was taken out hunting, the other was left lying at home. Two hours after both were killed, and it was found that digestion had not even commenced in the dog that was employed for hunting, while the digestion of the other dog was completed. 158. Hufeland says: "Air by being breathed 4 times is converted into a deadly poison. A disagreeable sensation from temperature, food or exercise is bad, so are the disagreeable odors affecting our sense of smell. A boy was killed, by holding the smouldering wick of a candle under his nose, while asleep. Suraja Dowlah confined 146 persons in the "Black Hole of Calcutta," 18 feet square, aired by a single grated window. At the end of 11 hours 123 of the persons had perished, while 23 remained alive. 159. After a season of London

smoke a breath of pure air has a chance of being appreciated. Great cities are great plagues, natural joy soon vanishes from the heart. Everything is seen here in disguise by paint; the countenance, the wall, and the very heart itself. Rural life among its poverty is rich. (Childhood being a period of excessive mobility it can not bear long confinement to one position or to one kind of labor. S.)

Gymnastics have the objection against them, that they frequently incite to overaction and thus the organs that are in need of strength become injured forever. 160. Cuvier being threatened with consumption overcame this disposition by frequent speaking. 161. Stays before womanhood are instruments of barbarity and torture. They are an appurtenance of the grown woman and their purpose is to support the bust. 164. The girdle of infancy is made to embrace the lungs, liver and stomach of womanhood in the form of stays. 165. The art of distortion is carried to excess in the Chinese, the rich man's daughter has her foot crippled at 5, two toes are bent under for the purpose of having a small foot. The action of the skin (and abdominal organs as well) are quickly stimulated by riding on horseback.

Bathing and ablution as affecting the health of the skin. (Water, saline matters, oil, albumen and scales are thrown off by the skin. The saline matters accumulating; by their affinity for moisture will carry off the caloric too rapidly and thus be apt to chill the body. The oily matters, may possibly be a solvent for resinoid bodies, as Cantharides, and probably the exhalations of poison ivy. The albuminous matters may indeed suspend animal or organic poisons like bacteria and vibrios and so may a dirty skin be the medium of carrying a contagious disease into the system, for contagious diseases it is however the lungs which must be looked upon as the great medium of transmission. In how far

the skin acts as a respiratory organ is a combatible point and it is likely to occupy but a minor position as such. Some great influence however has the skin over the health and life of persons, since a dog varnished all over will die after a short time with symptoms of diminished temperature, just as take place after extensive burns; it is therefore of the greatest importance to keep our skin clean. If foreign ingredients, on account of debility of the internal organs, the lungs, liver and kidneys are thrown out from the skin and such being arrested, by checking the perspiration, then this offal will first accumulate in the blood and finally be thrown upon other organs of the body, the joints, peritoneum pleura, lungs, bowels and kidneys. Scholl.) 167. Scherer found that the coloring matter of the kidneys was increased in diseases of the lungs, skin and liver. 168. Water is of the greatest utility to man, and it is on this account that it is adored by the Brahmans. 169. Hard water is hardly fit for use, to make it soft it is only necessary to add one hundred grains of sal soda to the gallon. 170. A man that is to brave the greatest cold of winter ought to use the water quite cold. For others it is not necessary and the water may be used lukewarm especially by females. Hot water is very objectionable since the skin is apt to chap. In alterations of whatever nature, let it be of temperature, of food, of clothing and of exercise, moderation and judgment have to be used. 171. The face and neck ought to have at least two saponaceous and aqueous ablutions in 24 hours, the feet and armpits at least one. 172. Drying the face use a moderately thick and soft towel, so that friction with pressure may be applied, since the object of ablution is not only to remove the dirt but also to stimulate the skin and to give it vigor. Ablutions have therefore a bracing effect after fatigue and labor. 173. The simplest way to apply cold water is by the wetted sponge. A new beginner should commence in

the summer time to use this ablution and by winter time he will be able to stand cold water without inconvenience. 174. Sir Astley Cooper used this kind of ablution and ascribed his robust health to it. The next form of ablution is the sponge bath, the bather receives the water squeezed on the different parts of his body. Reaction must always be ensured by friction. 176. The third form is the shower bath. The shower bath is an almost indispensable article of every household, it should be located in a room where fire can be made in winter. The sensations of the bather must be taken into account when adjusting the temperature of the bath. The skin that is able to withstand the effects of a shower bath will have become so fortified, that it will be able to withstand high degrees of cold with impunity. 178. The whole secret of safety in using this bath as well as in anything else, lies in the training, and the evil effects that have been observed are due to a disregard of this rule. The hair should be covered with an extinguisher-shaped cap covered with oiled silk. 179. The douch-bath is for applying water locally. The fresh water or plunge-bath offers few advantages over the shower bath. Sea bathing is more stimulating to the skin, and has a powerful effect by the grand scenery, to remove melancholy and nervousness. 181. The warm bath comes up to the natural temperature of the body, 98 degrees, the hot bath is from 98 to 105. The Turkish vapor bath has a temperature from 133 to 140 degrees, the bather feels at first a sense of oppression until the sweat commences to flow when he will feel relieved. From the steam bath the bather steps into a tepid bath, from 85 to 95, for ten minutes, where he is greeted with a shower of water on his head. The Romans used cold affusions after the vapor bath. 182. The Roman baths consisted of four apartments, in the Laconium the bather was subjected to heated air, in the Calidarium to a warm bath, from which he

plunges into the Frigidaria or cold bath and lastly enters the Tepidaria to be dried and anointed. Some of the American Indians attempt a rough imitation of the Roman Thermae. When they come out of the heated oven they plunge head over heels into cold water even in winter. They anoint their bodies with bear's grease. 183. There is no danger from cold affusions even when the body is in a state of perspiration and the nervous apparatus highly excited, the reason is that it closes the pores of the skin without lasting long enough to produce a chill, or carrying away any sensible amount of caloric. By closing the skin and removing the saline particles from it, the slow departure of caloric is prevented, hence persons retain so much more caloric to bring on a reaction and maintain the functions of life. 184. Thus the Roman youths after their combats, were wont to throw themselves into the Tiber to prevent taking cold. Sir George Lefevre says: "Let the bather not wait till he feels cool before he plunges into the cold bath, such an action would be hazardous." While the heat is above the natural standard little is to be feared from immersions into water of a lower temperature. 185. Bathing should not be attempted while digestion is going on. Bathing should last no longer than from fifteen minutes to half an hour. The application of cold water for a short time is also a powerful stimulant to the nervous system, provided it is short and does not go so far as to being on depression and shock, the bloodvessels and heart are also thereby powerfully stimulated. In this case the vasomotor nervous system soon reacts; the blood is thrown to the surface and it being so finely divided in the capillary bloodvessels, gets quickly acted on by the absorbed oxygen attacking the nutrient matter thus giving rise to increased temperature and the waste, demanding a renewal, stimulates the nerves of the stomach in the sensation of hunger, to a more active digestion. S.)

187. The ancients used to scrape the skin with an ivory knife, our means of stimulating the skin are the coarse towel, the horse-hair glove or rubber, and the flesh-brush. The Indian flesh brush is made of goat hair. A towel answers every purpose. 188. The tepid bath lowers the amount of pulsations is therefore sedative, the hot bath increases the number of pulsations, it is therefore stimulant; the bather loses weight and if continued too long may prove fatal by inducing faintness and apoplexy.

The Rashes of the Skin.

190. When the skin is inflamed we have erythema and erysipelas, if local and slight in degree it is called fiery spot, blotch or red rash if the spots are very small; when distributed over a large part of the body it is called "rose rash," common in summer after overexertion. 191. Nettlerash completes the number. Erysipelas has a nature to extend, is constitutional, often due to infection or contagion. 194. A blister, in snipping, should not be torn. The gall, chilblain and chap may, be included under this head. 197. Chilblains should be rubbed with snow. 199. The rose rash is also called false measles. 200. The common cause of nettlerash is an error of digestion. Shell-fish are bad. 203. Some fevers have an eruption or a rash; as scarlet fever, measles and small-pox. Measles are accompanied with the symptoms of cold in the head, scarlet fever by sore throat and red tongue, and small-pox by neither of these symptoms. A person with these diseases ought to be secluded for a month.

The Pimply Eruptions of the Skin.

Pimples may be dry, watery or mattery. The dry pimple is the red gum of infants and the lichen of adults. Ant-bite, Prurigo is very troublesome. Plato, Charles

the fifth and Charles the ninth were affected with it. 208. For the itching use the juice of a lemon with half a pint of water. Vinegar is excellent. 209. The watery pimple, is called when no larger than a pinhead and in clusters, eczema; when larger, rupia; and when as large as blisters, pemphigus. 210. When the eczema discharges much water it is called humid tetter, when this dries on the face of a child it is milk crust, and when on the head and the hair falls out, humid scali or scalled head. Herpes is what breaks out on the lips after a cold and is then called herpes labialis. In vesicular ringworm the patches travel from a centre, if the ring gets broken it is rainbow ringworm, if it attacks the waist of one half of the body, it is Shingles or Zona. 212. Rupia, leaves borrowing sores, and when the crust is thick, it is prominent rupia. Rupia occurs in debilitated constitutions. Pemphigus, bladders or Pomphilyx, water bladder are the same as common blister. In 1852 it occurred as an epidemic in Switzerland, the bladder-fever of the Germans. 215. The mattery pimple is larger than eczema and containing matter, the degree of inflammation divides it into impetigo (breaking out impetuously) and ecthyma. When the discharge dries into crusts it is termed crusted tetter, if it destroys the hair, crusted scall; when it extends from a centre it is crusted ringworm. In ecthyma, the bladders are the size of a split pea and it belongs to a debilitated constitution.

Scaly Eruptions.

These appear from a red minute point (as seen in Hilger Altendorf) and enlarge to about the size of a split pea, and when scattered over the skin it is lepra guttata. The scale that forms it has much likeness to large bran. They also sometimes extend from a circumference, it is then lepra vulgaris. Sometimes they are white, lepra alphoides; sometimes black, lepra nigricans. These erup-

tions are also called psoriasis, and if the bran is very small as on the head, pityriasis; also called dandruff, meaning itch and dirt. The scaly eruptions are very symmetrical, affecting both elbow and knee very much alike, selecting also the outside of the limbs in preference.

Itch is an eruption due to a mite the *acarus scabiei* of 1-77 part of an inch in length. Sulphur, night and morning for two days is the remedy. **Warts** are enlarged papillae, one or twenty may be affected. **Corns** are similar, when extending over a larger surface they are termed callosity. Excavate them and apply acetic acid.

Mother's marks, Nævus. When a small red point with some straggling vessels is seen on the nose it is called "spider's mark." Death may be produced by tickling if prolonged. A Frenchman at Paris, France, is said to have killed three wives by tickling them. **Creeping Sensations** (as Profy told me) are often troublesome, the person feels insects crawling on his body and still there is nothing there. 249. Excessive action of the skin exhausts the nervous system as well as wasting the fluids of the body. 250. Some persons sweat on one side of the face while the other half is dry. Red perspiration is due to blood.

Oil Glands. When their mouths are contracted so that the secretion is retained, grubs are produced; when the glands inflame from the pressure, it is "spotted acne;" when completely closed they form near the eye, millium; when over the eye and near the scalp, sebaceous tumors; when dispersed over the body, *muluscum contagiosum*. When portions of the oil tubes are destroyed by suppurations so that the orifice is obliterated then they are acne; if a kind of burrowing under the skin has taken place, and caused by drink, it is *acne rosacea*. 267. **The hairs** when removed by depilatories always return. Baldness may sometimes be caused by an affection of some nerves

of the scalp and is then limited to the distribution of those nerves. In baldness the skin becomes sometimes as thin as paper. Men to prevent baldness should wet their heads in cold water and rub them until a glow is felt. Women should have resource to the brush. 270. "You cannot brush the head too much, nor the hair too little." 271. Split hair requires snipping. 272. Poor and diseased hairs should be pulled out, and their bulbs will be stimulated to increased action. 276. Eble says that blanching of the hair commences at forty; cutting the hair, frequently associated with plucking, will prevent an extension of greyness, and sometimes correct the disorder. 278. In common ringworm or *Tinea* and *Plica Polonica* the hairs are diseased, In ringworm it is dusted over with a fine powdery scurf, around the hairs is a slight elevation, and in two or three weeks the hair will break off when combed. There are sometimes a number of spots on the head and are then called *scutulata* from being shield-like. **Plica Polonica** pours forth a fluid secretion which matts the hair.

Strength and health.

The popular belief that strength and health, are in direct relation is an error; They may be so, but they are not so of necessity. Strength pertains to the contractions of powerful muscles; health is the perfect and harmonious working of all the organs making up man.

A person may be able to lift 1000 pounds and still be subject to torpid liver, rheumatism and low spirits.

On the
Treatment of Diseases of the skin.

By Dr. M'Call Anderson of Glasgow.

11,000 cases analysed.

Henry C. Lea,
Philadelphia.

1873.

2. Diseases are classified into functional and organic. The organic are subdivided into those having uniform causes as the Parasitic, Syphilitic, Strumous, and Irruptive, and into those where the cause is variable as the inflammatory, cacoplastic and hemorrhagic.

6. Pruritus, is neurotic. Seborrhoea, Comedones and Milium. 7. Hyperidrosis. Ephidrosis cruenta in a lady 14 years old from face, arms, chest and legs, from round erythematous patches from a shilling to a crown, a ring formed almost instantly and then spreading in over the inclosed skin. One attack a day, generally at 11 A. M. Likely vicarious menst. 8. Ephelis, is an excessive deposit of pigment as on the brow of females. Melanopathia gives a marbled appearance. Vertiligo are pigmentless patches surrounded by a pigmented ring. The hair turns white on such patches. Arsenic is good. Regarding the hair we have: Alopecia, Hirsuties, Fragilitis Crinium and Canities. 12. Depilatory: — Sulphuret of Barium 1, Oxide of Zinc 4, Carmine $\frac{3}{4}$ grains. form into a paste with water and apply for three minutes then wash off. 12. Canities is a decoloration of the hair — commenced on inside of brow in a man of thirty. 13. Parasitic diseases constitute one-third of the bulk.

There are four vegetable fungoids. 160 cases. 13. The *Achorion Schoenleinii* causes *tinea favosa*. The disease is originally contracted from mice. The mousy odor of *favus* is characteristic. 14. *Tinea trichophytina* or Ringworm. 178 cases. *Tinea circinata*, *Tinea tonsurans* and *Tinea sycosis* are varieties of ringworm. The first affects the skin, the second the head, and the third the beard. The *microsporon furfur* causes *Tinea versicolor*, brown eruptive patches on the body, occurred 121 times.

15. The *Microsporon Audouini* met with 179 times causes *tinea decalvans*. 16. Depilation is necessary in these diseases. 16. Parasitic affections due to animal parasites constituted one-fourth of the number. Scabies, *phtheiriasis capitis*, *pubis* and *corporis*. 17. Syphilitic eruptions are apt to assume the form of segments and a coppery stain. 19. Strumous affections are as numerous as the syphilitic 557 or about 5 per cent. 20. *Lupus*, *erythematoïdes* and *vulgaris*. *Scrofuloderma verrucosum*. 33 cases.

Inflammations comprise one-half of the cases; of these eczema makes one-fourth of the whole. Eczema is made to include impetigo and lichen. Erythema (4 per cent) is to include, *strophulus*, *roseola* and *pityriasis*. Erythema is but a lower form of eczema. Pityriasis is the second stage of erythema. 22. Ecthyma are large isolated pustules terminating in crusts, in debilitated subjects. 23. Psoriasis (8 per cent) Wilson thinks to be remotely transmitted syphilis. India rubber underdresses are good. The psoriatic has a hereditary tendency to phthisis.

Acne vulgaris (342 cases, 3 per cent) is a disease of puberty, and is aggravated at the menstrual epoch. Arsenic does no good. Dr. Bulkley orders: Oxide of Zinc, one drachm; Sulphuret of Potassium, one drachm; Rose water, 4 ounces; shake, and apply night, and morning.

Acne rosacea is due to intemperance, it consists in a dilatation of the capillary bloodvessels. 25. *Rumex* root 9 ounces, lard 6 ounces, yellow wax one ounce, aqua bullientis 4 ounces. Diseases covering the whole body are: Pemphigus, Pityriasis rubra, and Lichen rubra. 27. **Warts** are called by the French a benign scrofulide. Arsenic is good. 28. Only two cases of Elephantiasis Graecorum or true leprosy were met with. Healing from the centre, spreading from the surface, leaving tubercles and anaesthesia behind. 29. One case of primary cancer of the skin was seen. At first there was erythema, then purple streaks due to obliteration of the bloodvessels, and third the formation of tubercles from a pin-head to a split pea in size. It spread over the chest, abdomen and arms. 30. Hemorrhages were: *Purpura rheumatica*, and *Purpura pemphigoides*, 9 cases. 33. *Purpura verrucosa*. 34. The sudden disappearance of a rash is due to a fatal complication setting in, or to a different eruption making its appearance. 37. Some remedies, as mercury and tar, are absorbed and act constitutionally. 39. The wet packing is useful in acute cases, sea or hard water is bad. 40. As powders: Starch, Lycopodium, Oxide & Carb. Zinc, Tale & Carb. magnesia may be used. 40. Poultices too hot applied produce secondary boils. As a soothing ointment use benzoyated carbonate of Zinc to which two drachms of tincture of camphor have been added to the ounce, or Oxide of bismuth one part to 15 of simple ointment, or litharge plaster 4 parts, olive oil 3 parts, melted. As a lotion use subacetate of lead, one part to 50 of water. 42. The empyreumatic oils are: *Pix liquida* or Guyot's solution of tar, *pix mineralis* or *Liq. Carbonis detergens* of Wright and Co. *Oleum Cadini* obtained from the *Juniperus oxycedrus* and *Oleum Rusci* from the *Betula alba*, useful in Prurigo and Psoriasis. Belonging to this class are Creosote and Carbolic acid. For chronic Psori-

asis use creosote two parts and white wax melted together. Of carbolic acid use a four per cent solution. 45. Syphilitic condylomata, wash with chlorate of soda and dust with calomel. Pityriasis capitis: use Perchloride of mercury four grains to the ounce. 46. Lupus Erythematosides emplastrum hydragryi. Sulphur is apt to produce eczema; it is for the acari a specific. In acne rosacea use rumex ointment four parts, hypochloride of sulphur one part. Sulphur is useful for acne vulgaris. 48. Acetate of soda, 20 grains is used to the ounce for lupus; it may also be injected into strumous sinuses. Hardy of the St. Louis Hospital recommends India rubber dressings for eczema, psoriasis palmaris eczema capitis, and pruritus senilis. 53. Epithelioma, paint with Fowler's solution. For chronic eczema use lye. In Lupus vulgaris apply the solid nitrate of silver, in Erysipelas a concentrated sol. of nitrate of silver. 54. Hardy applies to lupus the red iodide of mercury ointment and an equal part of lard to produce an artificial Erysipelas, or applies once a week the acid nitrate of mercury, or the actual cautery. 55. The part may also be blistered by being painted with a solution of one drachm of corrosive sublimate to the ounce of alcohol, applicable to small patches only; or Emplastrum Cantharidinis liq. cardum. Blisters are also most useful in tinea decalvans. 56. Iodine is good in lupus. 57. In tinea tonsurans use Iodine two parts, and oil of tar four parts. Patheriasis requires the application of powdered staphisagria 1 part, and lard 3 parts, digested for three hours and strained. 58. In Scabiei use liquid styrax one part, lard two parts, melt and strain, or liq. styrax one ounce, almond oil one drachm, and alcohol two drachms; also, sulphurous acid and hyposulphate of soda may be used, (or rather the bisulphate of soda or magnesia). 59. For epilation use the forceps. 60. Clothes may be disinfected by hot air, boiling water, or the fumes of sulphur.

If an eruption is symmetrical or extensive it is likely constitutional. Arsenic stands prominent in skin diseases. 61. Sulphate of magnesia and sulphuric acid as a purgative is useful, or phosphate of soda acidulated with phosphoric acid. 63. Diuretics. Use acetate of potash, in gouty tendency add colchicum.

Alcalies should be used sometimes before meals, so as not to neutralize the gastric juice and enough to keep the urine alkaline. 65. Prurigo, Hydrocyanic acid 20 minims to the ounce of water; apply three times a day. 66. Arsenic is safe; may be continued for months, children tolerate it better; it is bad in acute cases, bad in digestive troubles, is apt to bring on bronchial catarrh, may be associated with iron, and should be given on meals. 70. Liquid tar, two or three minims in capsules, three times a day for psoriasis with bronchial irritation. 71. Carbolic acid may be given in three or four grain doses, three times a day. The morning dose may bring on a transient giddiness, will succeed when arsenic fails, though not so useful on the whole. 74. Mercury should be used in the cutaneous manifestations of syphilis, especially if the eye is affected, or in old cases where iodide of potash has failed. 75. Lewin recommends 1-16 grain of corrosive sublimate to be injected daily. Mercurial bath: one-half drachm of calomel may be used. Mercurial ointment, the size of a bean may be rubbed daily into the thigh. 77. Iodide of potassium is likely to prove useful in extensive tertiary eruptions; in nose symptoms it is inapplicable since it is apt to produce coryza. 10 grains is the proper dose. 78. Dr. Polli of Milan recommends the hyposulphate of soda. 80. Dr. De Ricci prefers sulphate of magnesia.

**Theory and Practice
of the
Movement - cure.**

By

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22. The law of Treviranus is, that every part of the body is to the whole of the body as an excreted substance, thus every part of the body is by the demand for its nutrition a purifier to the rest of the body. In the oyster the carbonate of lime that goes to make up the shell if left in its fluids would soon poison it. The shell while it is being built up acts as a purifier to the fluids and a defence to the animal. 23. If the kidneys cease to secrete urea death will follow after three days. This secretion is due to cell-formation just as well as when the gastric tubules secrete the digestive fluid.

(It may be that the gastric juice being properly secreted, will keep the rest of the body free from lactic acid, which when such is not the case will accumulate in the tissues and cause rheumatism, so it may be the case that attacks of rheumatism follow indigestion, or where there is a loathing of food, or too little albumen presented to the stomach for digestion, as may be the case in drink-

ers, or fat persons, that live on soups and starchy food. Every organ has a selected office, the fulfillment of which keeps the other organs healthy, and is to itself the pabulum of life. Scholl.)

24. Every interstitial process whether it be secretion, excretion, innervation or new formation is nutrition. The molecular changes are reparative and regressive. 25. If the blood is not sufficiently called upon by the tissues for nutrient, then it must deteriorate for want of something to do, (and for being overcharged with nutriment matter, fever will result. S.) One-half of the gross weight of the body is muscular tissue. $\frac{1}{4}$ of all the food taken into the body go to supply the voluntary muscles. 26. Muscular motion brings on increased oxydation of the tissues hence a large demand for oxygen. 27. Urea is the result of muscle oxydation, and is abundant after exercise. The purity of the blood depends also on the nutrition of the muscular tissue. 28. Motion is the essential quality of all organized bodies; In the lowest organisms this is limited to cell endosmose and exosmose; in the highest organism the circulation and its appendages are superadded. The fluid circulating outside of the bloodvessels is supposed to be equal to that circulating inside of them.

The muscular fibre-cells perform the double office of nutrition and contraction. The capillaries lie between the muscular fibres principally in a longitudinal direction with numerous communications between them. A contraction of the muscular fibres by their lateral expansion, cause pressure to be made upon the capillaries propelling the blood forward towards the side of least resistance, the veins. The nutrient material passes first through the walls of the capillaries, then through the myolema of the muscular fibre and circulating there as lymph it is taken up by endosmose by the muscle-cells, who contribute in turn by exosmose the used up

materials to this interstitial lymph current. Muscular contraction hastens the progressive & regressive change in the fibre-cells, is hence an incentive to exosmose and endosmose. — The heart alone is insufficient to keep up the circulation, it requires the aid of the vasomotor nervous system and the will to move the voluntary muscles. 31. If the muscles of a consumptive person are put on the stretch by another person then the pulse will fall 15 beats a minute.

(I noticed in Mary Schultise a fall from 28 to 25 of the Respiration after a ride of two or three miles. S.) 33. The areolar tissue is the skeleton tissue of the body (a progressive formation of the ameoba. S.) This tissue is relaxive and retractive. 34- An irritation of some nerve will be reflected upon the organ having the efferent nerve distributed to it. (Applying l. f. s. to a sore on the side of my tongue caused by making an experiment on eating sugar, I immediately I felt the pain in my lower molar teeth of the same side. S.) Vomiting may be caused by tickling the throat, uterine contractions by mammary irritations.

(It is likely that many remedies taken into the stomach or breathed by the lungs, may act as an internal counter-irritant that is by acting on the afferent nerves of the stomach or lungs, and affecting distant organs by means of efferent nerves. It may be that Alcohol acts thus, first on the nerves of the stomach causing in the brain, through nervous liaison equal to efferent nerves, an expansion of the bloodvessels of the brain and consequent exhilaration. It is rather doubtful that absorption can be the cause of it in the first instant. Again when an old man suddenly dies from eating a tough piece of meat indigestible to him, it cannot surely be absorption what killed him, but nervous impression. It may be also that when a poison is inhaled, say sulphuretted hydrogen etc. that an impression is made on the

brain by means of reflex action, so may, a temperature too warm, a position too still cause faintness through reflex action. Scholl.)

If afferent nerves can be impressed so as to produce diseased action, then it is equally true that they can be impressed so as to reestablish healthy action. A blister to the chest in pleurisy can only prove useful under this supposition, local bleeding would be the same. (Now the good effects of a blister I have experienced, when I had a pain after taking cold in my right subclavicular region. When the blister, which had to be applied a second time, commenced festering, then the pain went away. It seems also as if an external or afferent dilatation will produce an internal or efferent contraction. I have also frequently noticed that, a chilling impression on the sternum will produce a roughness in the bronchial tubes, and cold water to the neck will produce sorethroat. In these cases there is no chilling of the body at all, we must therefore conclude, that an afferent contraction will be followed by an efferent dilatation. May be many of our colds are caused in this way. Irritating the skin and causing a dilatation of the vessels on the outside is generally followed by benefit; since by this means internal contraction of dilatation bloodvessels will ensue. Again hardening the system by ablutions would in this conception be a blunting of the nerves to external impressions; so that the internal dilatation could not be so violent, and since the injunction is imperative after bathing to rub the skin until a glow is felt, or till the internal vessels are again contracted, it is sure that no harm can follow that way. The internal dilatation caused by a cold bath would be a healthy dilatation, trying the elasticity of the tissues and being followed by contraction no inflammatory action could ensue. It is not to be understood that the afferent nerves cause contraction of the bloodvessels

themselves since this is done by the vasamotor nerves, but that the efferent nerves induce the vasamotor, may be by association to such contractions. It remains now an open question as to how powerful the afferent irritation must be in order to cause efferent contraction. Is it caused by disturbing the balance of the the nervous influence, or in virtue of some specific irritant action? S.)

36. Hope to the sick man brings life and health; despair to the well man disease and death. It is therefore often required not only to have muscular action simply, but muscular action influenced by mind, in curing diseases. 37. This would indicate that there is such a thing as medical Psychology. 39. Patients can disturb their own functions by unwise attention to them, and the influence of withdrawing the attention of a diseased organ is especially manifest. 40. Fatigue is in the ratio of the effort made.

(Passive motion requires not expenditure of force, since the muscular tissue is not caused to contract. S.)

44. Dr. Draper has shown that muscular contraction is rather the result of oxydation than the cause of it. 45.

Actual loss of tissue takes place with every muscular contraction, (but it must be remembered that Fick and Witzlious have shown the muscular tissue to act as a machine converting nutrient material into force, and not its structure. S.) In the muscular tissue we have a large

portion of the nutritive processes under the influence of the will. 46. Through motion, all vital phenomena of the organs are directly or indirectly influenced. In the

muscular system we have the great controlling power over our system; by its means we can fortify it against disease, and withdraw it from it if already attacked.

Pathology is modified physiology. The manner in which muscular contraction influences the circulation of the part may be seen by tying the arms, and making motion, the veins of the forearm quickly fill while one

muscle contracts its antagonist is drawn out. 48. The contraction of the muscle contracting is called concentric, the yielding contraction of its antagonist is called eccentric contraction. In the drawn out muscles the entering blood is still from the arterial side since the venous side has the least resistance and besides the valves in the veins prevent a reflex. 51. To obtain the best result on nutrition the muscular effort must not be carried too far. 52. When imperfect nutrition or disease has altered the chemical composition of the fluids by reducing the alkalinity of the blood or the acidity of the tissues, or that the membranes have been changed; then endosmose or exosmose will also be affected so that the one is in excess of the other. If endosmose be in excess then we have relaxation, if exosmose be in excess, then we have retraction. 53. A retraction is a permanent condition, a contraction a temporary one. A relaxation of muscle exists where the muscle-tonus has been destroyed; the muscle is longer, depending on weakness passing into actual paralysis. 54. The concentric movements of the muscles accelerate the egress of the fluids from the tissues; the eccentric movement produces a more perfect supply of arterial blood. 55. In consumption, the chest and muscles are wasted and contracted over the diseased lungs, showing a dependence of the containing part on the part contained.

(The contents determines the shape and existence of the containing part. The nerves of the lungs may here determine by their weakness or want of stimulus the wasting of its efferent nerves. These conditions are evidently due to nervous action. S.) So also in constipation of the bowels, the abdomen being hard and retracted.

(This is also due to nervous influence. Now the question arises, that if the contents determine the form, whether the form or containing part may not also modify

the contents? It almost seems as if it could not be otherwise, and we may be safe in concluding that as the contents modifies the form, so also the form modifies the contents. We have also two ways of applying our therapeutic or hygienic means; the one by acting on the contents, and the other by acting on the form or containing part. S.) 57. It is questionable whether these means are applicable in acute diseases. 58. It is not only the muscle that moves in exercise but also every part connected with it, thus the bones, tendons and areolar tissues are also put to the test of health. The bones are in need of muscular action to insure their development, the areolar tissues to maintain their elasticity and strength. 59. The muscles of the chest cannot move with the lungs at rest; all must move as a whole, the lungs forming a part of the apparatus. 60. The laboring man requires also exercise to undo the injurious effects of his occupation. To the youthful mind we are quite willing to apply proper training to develop the same; why should not the same training be instituted in developing the body? A criminal who was confined with a chain about the ankle of one leg, showed after death that this leg had become as light as pine wood, although its size and shape were retained. 61. The vertebrae of a carpenter are heavier and larger than those of a tailor. Simple muscular development is not what is wanted, but the development of such muscles as are conducive to health.

(Exercise when associated with fear, is exhaustive, when associated with assurance it is not felt. Fear retards the tissue change. Assurance promotes it; no fatigue can in the latter case be felt until the nutritive material of the blood is exhausted. S.) 63. A druggist when writing at the desk was troubled with a pain in the region of the spleen, when taking down and putting back bottles on a high shelf it would leave; swing-

ing by the hands answered the same purpose. 64. In Ireland hanging by the hands from the limb of a tree is a cure for the liver complaint. The contraction of the trunk by bending may bring on abdominal congestion. 65. The capacity of an individual is in proportion to his capacity to feel and to will, the muscular instrument added. 56. Sensation and motion constitute together an individuality, but they are not necessarily balanced. When sensation is in excess then motion will be enfeebled; When motion is in excess then sensation will be blunted, one is at the expense of the other. 68. Exercises for the development of motive power and reducing morbid excitability, should be easy but have duration. The changes in the tissue are in the ratio of the continuance of the nutrition and the effect on the nervous system is in the ratio of the intensity of the effort (?). 69. The best results of exercise have been reached long before there is any sensation of weariness, when the latter ensues the good results have been overstepped. 71. In the care of local diseases or deformities, localized movements become necessary, and the systematic carrying out of this idea constitutes the "Movement cure."

When the will for want of exercise has caused irritability or melancholia, then fatigue will be salutary. Exercise wants to be taken in accordance with the indications of disease. Habitual exercise can be taken in a large amount without fatigue to brain or muscle. 73. Ladies, do not admit that they are lacing tight even when suffering from the consequence of it. The tendency of parts is to recede from persistent resistance; a very slight resistance not amounting to compression exerts thus a baneful effect. 75. Fatigue demands rest not support. Cold feet are often caused by tight stocking-bands. 77. The performance of function whether of mind or muscle is necessary to health. As mental conditions influence bodily nutrition, so do bodily conditions

influence mental manifestations.

(In a balanced individual the faculties of mind and body are well developed and harmonized, and he is well awake to scientific truths, but the man with a crippled body is unable to develop a system of ethics at all worthy of consideration. S.) As the body is trained to the use of the muscles, although the movements vary every minute, so that the mind must be educated to the use of principles (common sense) which it may apply in ever varying arrangements.

Curvature of the spine.

80. Curvature of the spine is caused by the unequal action of the lateral and antero-posterior muscles, or the throwing of the centre of gravity to one side of the spinal column as is done by standing on one foot. The spine, being flexible in every direction, is held straight only by the action of the muscles. Being bent over while studying will cause the most frequent of the deformities, the stoop, or round shoulders. 83. The next most frequent deformity is in the dorsal region and goes under the name of lateral curvature. This is generally to the right, three times out of four owing to the right arm being generally used, or standing on the left foot. Printers that have been working for many years at the hand press generally have lateral curvature. 84. **The sigmoid curvature** has two opposite minor curves one in the cervical, the other in the lumbar region. In these cases the spine appears to view, to be crowded under the right shoulder making it more prominent. The right hip also appears higher than the other. 86. The crescentic form of curvature has but one curve, the compensating curves are wanting. The point of greatest curvature is lower down, than in the sigmoid form. It is much less frequent. 88. Overaction of some muscles will

amount to the same thing as underaction of others. (It is hence a disturbance of balance of antagonistic action what produces the deformity. This law holds good in all diseases of whatever nature. Actions or functions that are antagonistic become disturbed by depressing the one and elevating the other; the result is the same. The causes of disease partake consequently of this twofold nature. The remedies are of the same twofold nature, the one obtains the balance by depressing the strong organ, the other by elevating the weak one. Scholl.)

To cure these deformities we go to work in an opposite direction; if the curvature is to the right, then we attempt producing curvature to the left until the spine gets straight. 90. We apply concentric contractions to the concavity of the spine, and eccentric contractions to the convexity of the spine. In curvature of the spine to the right, the left ankle is universally weakened. Standing on the left leg will strengthen the ankle, raising the left arm will draw in the curvature to the right. 94. The patient may also hang from the left arm against a turnpole in the region of his breast. 97. Lateral curvatures are also associated with a horizontal twist of the body. The protruding part of the arc is most reluctant to yielding. 102. Cases less old than two years in young individuals may be cured in from 3 months to 2 years. In the course of time the vertebrae become wedge shaped blocks. Wearing a supporter is bad. 105. The eccentric couch is useful. 109. There may be cases where an instrument may be used as a palliative when there is no hope of permanent cure. 111. Measuring the deformity is done by carving pasteboard to the side of the patient.

(For the cure of curvature the best result may be obtained from exercise of the weakened muscles while the stronger ones are under an elastic restraint accomplished by wearing an elastic apparatus assisting the weakened

muscles but allowing them due motion. Scholl.)

Paralysis.

117. Paralysis is not caused by a defect of the muscular tissue, but by a want of connection between the influence of the brain and the muscles. Paralysis is centric when in the brain, eccentric when in the nerves. **Peripheric Brain.** (I regard every sense as an individual existence, which throws out its feelers into surrounding media for nourishment and stimulus for its action. The nervous "plaques" of the muscular system constitute an individual existence sending its feelers into the brain. The tactile bodies are only organs or instruments, merely coiled nerves without ganglion cells. What authors understand by "peripheric brain" is the nervous expansions of sentient and motor nerves being equal in mass, to the brain mass. S.)

The means used to remove paralysis if functional, has also a tendency to remove the original disease, if not wholly disappeared. 120. In the case of functional trouble, the original lesion having disappeared, it still is necessary to induce an incipient motion from without, as is done in starting a train, one motion will be the condition of a second. 121. A shock to the nervous mass might produce an arrest of its motion without any lesion as happens in hysterics and in being struck with lightning; the motion is arrested, and may want only a new impulse to set it a going. (The phenomena of shock requires investigation. S.)

122. A boy, aged five years had a piece of the skull driven into the brain; an ulcer followed, which healed in a year. Paralysis was the consequence, at 11 years he was treated, with benefit. The paralysis was also due to want of use since the original lesion remaining, could not have changed so quick. 124. M. Trousseau does nothing for cerebral hemorrhage after it is an established

fact. 125. The odor from paralytic is the same as from aged persons, due to a want of tissue change. 126. Friction by the hands will often reduce oedema when there is no muscular contractions. 127. How can volition be communicated from the central to the "peripheral brain"? The position must be such as to throw the voluntary muscles out of play, and the flexion or extension of the muscles must be executed by an assistant the instant the will desires the same. This way the patient cannot tell how much is due to his will and thus his hope is kept up.

A patient may be able to send a little of nervous power to influence his muscles; but they will not move until a just large enough quantity has been sent to them. 135. If reflex spasms remain in the muscles after paralysis, then the wasting will not occur. 138. Constipation of the bowels and incontinence from paraplegia, must be remedied by acting through the capillary circulation. The abdomen when put on the stretch is to be rapidly shook or vibrated by the hands, followed by kneading in the course of the ascending, transverse and descending colon. For incontinence vibration is to be made with a stick against the perineum, the thigh drawn up. Generally successful. 143. Dr. R. B. Todd says: "Exercise, active or passive is best in paralysis, electricity may do harm, and strychnia may do mischief, and never any good." 145. Apoplectics are rather spare and anæmic, 5 per cent exhibit a short neck. The paralysis is generally due to ætheromatous deposits whenever a rupture of vessel can be discovered. The apoplexy is consequently due to a disease of the bloodvessels (due to alcohol). 148. Sometimes it happens that the muscles will act surely under the influence of the will, but tardily, they come too late. When the leg is ready to give way then comes the support from the muscles. 154. A gentleman contracted facial paralysis from having his

face the night before exposed to a strong current of air. Percussion of the face with the fingers cured it in a few weeks.

(I once treated a musician for facial paralysis of the right side, blowing had become impossible, he got well under strychnia in two months. Minard was affected with right facial paralysis from an inflammation in the parotid region, terminating in suppuration and exfoliation of a piece of the ramus of the lower jaw. S.)

155. Paralysis in infants appearing usually in the course of the second year from brain affection caused by teething, bad nutrition, and diarrhoea. These cases leave behind as a rule a "withered limb" owing to this limb being thrown out of use, the other limbs being sufficient for motion. 157. A lady at twenty had such a "withered limb," for a little less than twenty years. 158. The deltoid was completely atrophied; After a few months treatment the deltoid commenced to act, and the adductions of the thumb that had not acted since infancy were suddenly drawn into the palm with considerable force, the muscles however improved in size some time before the contraction took place. These cases are benefitted most. Syphilitic cases where an unceasing "drawing" of the extremities is felt, indicative of an implication of the chord, are hopeless.

Promotion of the circulation of the blood.

163. Considering the large amount of blood called upon for the nutrition of the muscles, muscular action is the great and prime motor of the circulation. Cold hands and feet are sometimes the effects of diseases, but again they may be the cause of diseases as well.

(A disturbance of the balance has taken place which disturbance may commence on either end of the beam. S.) 164. General exercise is unable to accomplish good in these cases, because the blood is hurried rather more through the lungs, increasing congestion and, since fa-

tigue or debility is already existing, this will be only increased. The blood flows towards the parts most exercised, localized movements are in such cases indicated. Gymnastics generally produce paleness and coldness of the extremities, palpitation, oppressed breathing, they defeat as a rule the effect sought and desirable.

165. Movements that do not excite the patients volition are most desirable. 166. Take a hold of the patients toes and move them in rapid rotation. 168. All other parts may be exercised in a similar way to act as a derivative from internal parts. All, movements or general contractions (?) that do not excite the heart's action, act as a general derivative, producing a centrifugal effect. 171. Hanging by the arms produces lateral compression of the muscles, it thus empties the venous capillaries. The parts may also be put on the stretch by assistants. 173. The first and last object is to **secure a proper distributing of the circulating fluid**, all what can be done centres in this law.

(A proper circulation of the Uterine, Urinary, Intestinal, Mammary, Cutaneous, Sanguinous, and Lymphatic or Plasmatic contents is indeed all what can be attended to. The most essential of which is the Plasmatic. S.) 173. As the external capillaries become filled, the heart beats slower.

(The reason of this is, that when the heart is obliged to beat fast the blood passes only through the large and internal capillaries, thus nourishing the tissues very poorly and keeping the heart agoing fast, while the blood flows freely through the minute capillaries, the tissues get well nourished in that case, and there is no longer any need of the heart beating so fast. When the heart beats fast it is on account of inanition of the tissues. Scholl.) 175. Cathartics cannot remove constipation as a habit. Though medical treatment may be as good in this case as in any other. The proximate

cause is deficiency of the intestinal muscles, and debility of the nonstriated muscular fibres; the tissues are in a retracted condition, exosmose has exceeded endosmose and the capillary network and cell structures have been reduced. 176. Constipation may also depend on a flabby abdomen. In all cases the physical aspect of the abdomen is changed. The object is to induce an arterial capillarity of the abdomen and its contents, the movements must hence be eccentric and when flabbiness exists eccentric and concentric movements together, and mechanical agitations of the abdomen and its contents. 179. Lying on the back and lifting the legs would give a concentric movement; being tied loosely to a post, an eccentric movement. 181. Care must be taken not to do too much, or laceration of some fibres, muscular or areolar may be produced, inducing congestion and inflammation. Whatever we are fitted to do or endure we must do or endure it or else we lose the power to do or endure it. The doing or endeavoring is hence a stimulus to the organs keeping them in healthy play. Every function has its physical stimulus, seeing has light, hearing has sound, motion has sensation and vice versa, digestion has food, and evacuation residue for a stimulus. The muscles and contents of the abdomen require to be vibrated with the hands or kneaded with the fingers in the region of the ascending, transverse and descending colon. Striking the glutei muscles with the fist will stimulate the efferent nerves of the intestines and cause a movement of the bowels. 186. To excite the liver to action "cupping" should be employed while the right hand is elevated above the head. Percussion in this region will sometimes produce catharsis. This movement is eccentric to the liver. A few weeks of treatment will generally affect a cure.

Chronic Diarrhœa and constipation are frequently due to like causes. In chronic diarrhœa there is a stag-

nation of the blood in the venous capillaries, the serum of the blood, exuding from these vessels to the bowels, or else the mucus is too abundantly secreted by the irritated glands. 191. The object to pursue is to remove the local irritation by irritating the muscular system. 192. Concentric movements of the abdomen will expel the blood from the venous capillaries, by forward movement of the trunk or raising of the legs. Kneading the abdomen is of the greatest importance. 193. The liver if enlarged is to be treated by succussion, percussion and twisting of the trunk.

Dyspepsia. 196. Chronic gastritis. Tongue red, dry, patchy and fissured; looking like raw beef, the pharynx vascular, appetite voracious, distress after eating. (In J... A..... the distress after eating was due to a congested state of the stomach due to want of proper action of the heart which would intermit, digitalis proved curative. There was also a sudden and imperative demand for food. Similar cases are frequent. Scholl.)

In this atonic or nervous dyspepsia there is little local disturbance. 198. The chronic gastritis is due to a debility of the venous capillary vessels, while nervous or atonic dyspepsia is due to debility of the muscular structure and nerves (probably also of the secreting organs. It is very likely that the constitution suffers first before any local disease becomes evident; as pharyngitis, catarrh, and leucorrhœa. 199. The gastric derangement is always in the inverse ratio of the circulation in the extremities. 203. In Atonic dyspepsia the whole system requires invigoration and the stomach in particular. The stomach, being poorly nourished by poor blood or a languid circulation of it must necessarily partake of the bodily debility. The nervous system being not only nourished by poor blood, but also irritated and exhausted by a pain and pressure from flatulence and unnatural contractions of intestinal walls, nervousness and hypo-

chondria are the result. Scholl.) 204. A general shaking up of the liver and spleen, manipulations of the stomach, and rotations of the trunk while hanging from a pole by the arms.

Consumption. 209. One-fifth of the human race is carried off by consumption. The essence of consumption, lies in a faulty nutrition, the affection of the lungs is the manifestation of a general running down. Lungs infiltrated with tubercles do not admit sufficient air to carry on perfect nutrition, must necessarily be followed by an accumulation of impurities.

(Poor nutrition precedes consumption. A want of stamina, of endurance and surmountability only can make it possible; while strength of body and mind with plenty of blood and muscular tissue as arrear-guards would make it impossible. Its setting in is the giving way of the system, it is the dying of the lungs, and the other parts must soon follow. To cure consumption would be to cure it before it has set in, that is while the body is in a stage of deficient nutrition and before any deposition has taken place. S.) Nutrition takes place in the cellular elements, the cells are influenced by air and exercise as well as good food, and the removal of effete substances. 211. If the nutritive plasma is not used up by cell-growth, then there can not be good digestion of food. To produce tissue-transformation there is nothing like exercise, but exercise may injure as well as benefit; the exercise must hence be graduated to the ability and circumstances of the patient. In our streets we see daily men and horses made weak and useless by exercise. 212. The young man badly nourished understands that to get more muscle he is in need of exercise, he starts on a run, tugs dumbbells, twists himself on the turnpole until his debilitated lungs become seriously congested, and spitting of blood ensues or probably inflammation of the lungs and in six months he is

no more. 213. The first thing then to secure is a proper circulation of the blood, and especially by working upon the extremities; expansion of the chest should not be attempted until this has been secured. Dr. Corson states that there is a comparative difference in the movement of the shoulder over the diseased lungs, he says: "Get behind the patient and watch the motion of the shoulder on a white wall, at the acromium and angle of the scapula. The lack of motion above or below indicates the site of the disease. 215. The rigidity of the muscles and contractions of the chest must be overcome, since they increase the difficulty of breathing and also in the hope that the form will affect the contents. 216. The patient should be drawn out by the arms, forward flexions to be avoided. The chest should be expanded longitudinally and laterally. 222. To unload the lungs, vibrations of the chest are most excellent: nature points the way to this by establishing a cough. The hands of the patient may be taken and rapidly jerked up and down so as to shake the chest while some traction is being made. 224. Clapping or percussions over the chest are useful. 225. Patients whose pulse was a hundred fell after an hours treatment to ninety. Many persons in the early stages of the disease may recover.

(Scrofula is a symptom of suppuration of cutaneous or mucous surfaces and is due to absorption. The preexisting condition is a great vulnerability of the tissues due to bad nutrition and want of exercise. Scholl.)

Angular disease of the spine. It is like "hip-joint" disease, a local manifestation of a constitutional disease and consists in suppuration and absorption of the body of the vertebrae.

(All local and persistent diseases may be due to a constitutional origin, where the local affections constitute a fecal depot to the constitution. Scholl.) 232. The

spinal muscles may be assisted by an instrument, allowing backward but no forward motion, called "spinal assistant."

Deformities of the Limbs. 240. The defects of morbus coxarius may be much improved by passive rotations, bending etc. of the joint. Flexion at the hip may be overcome by a weight of two or three pounds, attached to the foot at night. Too much should never be attempted at once.

Chronic injuries of the foot and ankle. 244. It after a sprain the foot is used too soon, there may arise a venous congestion due to debility of the parts, and then every little injury will be enough to lay the patient up for some weeks, a large amount of arterial blood being thrown into the debilitated tissues. Muscular motion is contraindicated, but passive motions, as rotations and concentric movements, not bringing about an afflux of arterial blood, have the best effects. 246. Natural bone-setters get the patient into a quiet non-apprehensive state by steaming etc. and then proceed to set his bones.

Diseases of Women.

249. The sanguine expectations of topical medication have not been realized and the caustic has ceased to be the physician's talisman. Patients once cured, have returned again as bad as ever; while others having leucorrhoea and backache have got well without treatment. 250. Such treatment does not touch the constitutional defect (which is muscular debility) reproducing the disease. 251. If a wound heals badly we do not suspect the wound, but take the constitution to be at fault, and it is just the same thing with sub-involutions, versions and prolapsus. All the symptoms of these diseases may be present, without any positive disease. 252. Diseases have also their time and will then get well in spite of everything. 253. Female complaints are rare in the

Swedish hospitals owing to the ladies attending the gymnasium. 254. With our American ladies physical culture is entirely neglected, and nervous susceptibility cultivated. Girls are not known in this country they are all ladies. Thus the capacities of the body are turned from tissue-making to sensational life. 256. They are like plants that have been pushed into the formation of stalk and leaf, without being firmly rooted and having formed sufficient woody fibre. Much succulent beauty, but little enduring strength. 258. While the muscles of the back and abdomen have become weakened, the pelvic contents will have a tendency to sink lower, and especially if there is constipation. Long waists, heavy skirts and tight stays will assist in producing prolapsus. The best instrument is strengthening the muscles of the chest, back and abdomen. 260. The blood flows towards the parts that are most exercised. To remove pelvic irritation establish an active peripheral circulation. To heal ulcerations, furnish a purer blood by means of muscular action. 261. At first only such muscles must be used as will not bring on fatigue or nervous exhaustion. 262. The fatigue of the nervous system is in the direct ratio of the intensity of the effort (velocity of movement.) To walk a mile does not bring on as much fatigue as to run a mile: while the muscular contractions have been the same. The benefit accrues in the ratio of the continuance of the movement

(The author labors here under a serious error. The power consumed is in the ratio of the square of the velocity, that is if I walk a mile in twenty minutes, and run a mile in ten minutes, then I consume four times as much power in the latter case as in the former. How far the continuance is a benefit is an open question; however, the continuance must fall short of fatigue. S.)

263. Movements not to fatigue the patient must be

executed very slowly. In suppression, the adductors should be especially exercised; if dependent on organic disease (of the lungs or other organs) then the general health requires to be improved as a first requisite. 268. Swinging by the hands while yet standing is of benefit. 270. Strong muscular action followed by complete rest is the best means for muscular development. 271. Twisting of the body will strengthen some of the abdominal muscles. 273. Exercise in the prone position will have the advantage of gravitation in cases of prolapsus. 274. The passive and active stretching of the muscles is a great means of increasing the strength. 276. Diseases have also their fashions; what went formerly under the name of "spinal irritation," goes now under "cervical ulceration." 277. Dr. Thomas Inman thinks there is no such thing as spinal irritation.

The soreness noticed by pressing along the spine is a symptom of muscular weakness. We find the soreness at the base of the skull, at the 7th cervical vertebra and over the sacrum, where it is generally worst. In all cases this soreness is most at the sides of the spine, where the muscles are, generally in their musculo-tendinous union. The contraction of a debilitated muscle is more like a spasm.

(As I noticed in the case of William Dr..... on the 15 Jan. 1876, when affected with hernia, I could not reduce it even after using some force. Sending for chloroform made such an impression upon him, that another trial was successful immediately, the spasm became relaxed. Scholl.) Sitting all day long is enough to bring on a pain in the back, and even if the person is resting, these muscles have no rest therefore they are overdoing. 279. Let the rest of the patient be complete and perfectly horizontal. The exercise taken should be short, varied and vigorous. 280. The irritability of the nervous system is in an inverse ratio to the development of the muscles.

Derangement of the nervous system. Persons suffering with nervous derangements, have all their ailments magnified as if by a microscope, so that they feel pain and suffer out of proportion to their ailments. 285. There is always a hyper-excitability of the nervous system; many of them possessing no structural disease whatever. These derangements of the nervous system are generally the remains of some previously disturbing causes, which causes may have completely passed away and the disease still remaining; or shattered nerves may remain, under which the system forms a habit which remains as a distinct condition, the same as a scar remains after the healing of a wound. 286. Just as paralysis may continue from non-use of the muscles even after the exciting cause has ceased to operate, so may an over-excitability of the nervous system remain, from overuse even after the primary cause has disappeared. 287. To allay nervous irritation, the muscles must be stimulated to contractions. 288. A small fright may take all our strength away; thus, those nervous or bedridden persons consume all their energies by fretting them away leaving none to build up with. 289. The judgment is necessarily colored by the feelings. These patients should never be made to do more than they are well able to accomplish, otherwise when failing they will be greatly discouraged.

Peter Henrik Ling, a Swedish Physiologist and poet was born in the year 1766, and died in the year 1839. While at Stockholm he was attacked by gout of the elbow, to cure which, he conceived the idea of making use of exercise. Thus the "Movement cure" or Kinesipathy originated. Dr. Chas. F. Taylor of New York perpetuated his system. Ling studied to bring about a harmonious development of the whole body by his system.

The value of cutaneous development.

By Dr. J. T. Scholl,

Ozaukee, March, 1876.

When the body dies the limbs become cold, the circulation gives way in them first, the internal organs live longest. If now we would develop and educate the centrifugal parts, namely the muscles of the legs, feet, arms, hands, and above all the muscular tissue of the skin which is essentially an organ endowed with movement and belonging to a higher animal life than the fibrous tissue; then this development would shield the internal organs from destruction and death. The development of muscular tissue in a human being may be in the ratio of his long life.

If the cutaneous muscular tissue is well developed, it will react one way or the other, by dilating and contracting, the skin is not only a shield by its epiderm against poisoning but also by its muscular development a guardian angel to the internal vital organs; the skin is a sentinel ever watchful, to guard the otherwise occupied internal organs from an extraneous invasion or surprise. The skin requires hence development just as well as the muscles of the legs and the heart, and although so much neglected is of just so much importance. Each muscular disk is a being endowed with an individual vitality and this vitality lying furthest away from the heart and brain has to give way first before the other vital organs can go. The assemblage of them acting as a unity will fight for their existence and thus death will be impossible in cases where it otherwise would be. The vitality of man resides hence in the cutaneous muscular tissue, far more than in any other muscular tissue. The muscles of the legs are only for giving motion and although each disk fights also for his life, they are not of such importance as the muscular cutaneous tissue since the latter regulates the avenues of the vital system. A man may also have a small muscular development but a pow-

erful and well developed skin, and he will live longer than the athlete.

It is very likely that the skin of persons who have attained old age was very muscular and active. It may be that the vasomotor system of nerves is influenced by the cutaneous muscles and probably created by them. We may assume that the vessels are cutaneous membranes, also endowed with muscular tissue of a regulative nature, the skin regulating the blood flow as required by temperature, the vascular membranes regulating the blood flows as demanded by the muscular hunger and thirst, that is in the degree the fluids of the muscular cells have been used up.

The muscular cutaneous tissue is not under the influence of the will, its development has not attained to that degree of perfection. It is only in the lower animals, in the neck of the cow, that the voluntary motion of muscular tissue is possible. The skin in man only under the influence of the involuntary or automatic nervous system, influenced only by heat and cold, drought and moisture, by tissue change, by electricity, mechanical and chemical irritants, but not by the will. In order for the will to have an influence over the muscular tissue, the latter must be in a high state of development. It seems as if the muscular tissue was differentiated to such a degree, that one set of muscular fibres was influenced by tissue change, another set by heat and cold, another set by chemical agents, as urea on the tubules of the kidneys, bile on the liver, blood on the heart and blood vessels, or by physical force as sound on the muscles fixing the tympanum, light accomodating the eye to far and near, brilliancy and darkness; each for a different but particular stimulus and only when the development is up to a high degree that the will can be brought to bear upon it. We have no control of the muscles of the ear while some of the lower animals have the circulation of their brain under muscular control. —————

Deutch - Americanische Gewerbe und Industrie Zeitung.

Prof. D. Fleck.

Vol. iv. page, 74.

1876.

DIET. Of infants getting the breast, three die out of every ten, of those getting the bottle, seven die out of every ten. — The stomach is the first organ to give out as age advances which is probably due to the loss of the teeth. The object of Nutrition in youth is to build up the body, and maintaining it in a proper medium (temperature) while with the adult, no building up requires to be done, but only to maintain the body in its present status and its mediums.

(Tuberculization takes place when the body ceases to grow, the material before employed to building up the bony structures is now deposited as tubercles. I believe that all cases of tubercles are deposited prior to 21 years of age, say from 14 to 21, and that this cacoplastic deposition is a remnant of the same crystalizing process which constitutes growth; and which probably ought to have been yet deposited but from want of proper health this process is prematurely arrested and the material deposited in the lungs etc.. This crystallizing process called growth is something else from nutrition afterwards, the juices become freed from such substances as determine growth the same way that a fermenting juice gets freed of its fermentable albumen by the development of alcohol. Schöll.)

When a tissue is irritated its fundamental element will be reproduced thus when the lungs, or cutaneous surfaces are inflamed leucocytes or amœbæ will be thrown by wholesale into the circulating medium. As the buffy coat of the blood of John Becker demonstrated. Now

any other tissue being inflamed will throw the products of that tissue into the blood. Supposing the liver to be inflamed it is very likely that cholesterine, the biliary acids and coloring matters should pass into the blood and if secretable be thrown into the urine. Or the glucose being thrown into the blood would appear in the urine. If the kidneys become inflamed or its mucous membrane passing into the bladder, then this membrane may secrete a larger quantity of uric acid and thus urates deposit in the urine. Or we will suppose that the muscular tissue becomes irritated from over-exertion then lactic acid and possibly urea may accumulate in the blood and be thrown on the synovial or lymphatic membranes of the chest, abdomen or joints. Irritation of the cerebral substance may give rise to a phosphoretized compound, giving rise to brain sand or some such thing, interfering with the performance of its proper function. Thus I maintain that every tissue of the body when irritated throws its own particular product into the blood demanding elimination, and if this elimination is not accomplished on account of defective excretory organs, then disease must necessarily follow. Scholl.)

Food, according to the composition of the milk or egg, should contain for every part of albumen, two parts of fat or three and one-half parts of starch. In meat diet it is especially the salts that are of the greatest benefit. Persons getting fat by drinking beer, have their muscular (intercellular) juice diluted with water and their bloodvessels dilated, (they are to be compared to a beet that has been very much enlarged by frequent rains, the sugar it contains is small and very much diluted, while the beet on dry soil and with plenty of sun has a rich juice, contains twice as much sugar as the other even if it is smaller, the easy sweating of such persons ought to remind them that there is too much water in their system. Scholl.)

A man's daily ration should be about three-fourths of a pound of meat and two pounds of bread. The peasausages (Erbswurst) of the german army seems to have met the right proportion of nitrogenous and carbonaceous food. On the average a man loses 20 days labor through the year.

Stimulus. (The proper stimulus will produce any thing in organic life. A strong stomach is the result of proper food applied, muscular development is the result of the stimulus of muscular contraction. A man learning does so in virtue of a stimulus, the one is stimulated by hunger, the other by love, a third by ambition, and a fourth by vanity. If we but knew what stimulus to apply to ourselves and others we would be able to educate great men at all times. There would be no need of debilitated persons in mind or body. The proper stimulus is a graded stimulus, it must not be too powerful else the bow will be overstretched and a failing of our intentions will be the result. The first stimulus must be of such a nature as to bring out other and more powerful stimuli. If we can get an ignorant person to understand his ignorance then we have gained a great point. An ignorant person has no idea of any greater knowledge than he himself possesses, everything is a blank card to him, a tableau rase. Want is the great stimulus to all nature, the want of matter in some parts of the heavens is the cause of motion, the thin air at the equator is the cause of motion of the heavier northern air. The want of happiness of the people made them embrace the christian doctrine of eternal happiness. But in order to supply a want it must be felt, and in order to feel it a certain degree of education is necessary which requires a proper stimulus. Wants are of two kinds, bodily and spiritual, and since the body is first and the spirit or the brain a second story built upon the body, so it becomes necessary to apply our stimulus first to

the body and then to the mind. A great many persons remain upon that degree of development that they appreciate no other stimulus but that what applies to the body, and their brain development goes no further than supplying the direct wants of the body. The first want is hunger, pain and cold, thus a child will work when hungry to get a piece of bread, and this work will be a stimulus to the brain to think which way it can be done best. The school-boy will learn because he is afraid of being whipped. The adult when he feels pain, commences to think what may be done to remove it. Cold will stimulate persons to invent clothing etc. The wants created by love, vanity, emulation, etc. belong to the period of sexual development. The decadence of the sexual power will again abolish these wants and hence will prove no longer a stimulus to the bodily and mental development. To produce a man of metal is to place him in strict circumstances, to keep him just above water with his head so as to keep him from drowning, so as to keep him laboring for his safety. Straight circumstances make the man. A boy will not care to study the laws of health until he has experienced the sad effects of disease. Scholl.)

Power. A power is nothing in itself, it is a plus of matter, alongside of a minus of matter. If we consider the air to be thin at the equator and the rushing into it of a northern current; so is this current, due to the matter in motion and is the same as the waterfall of a mill race. Force is hence nothing per se, it is only matter in motion, a plus of matter moving to a place where there is a minus of matter. If the power is to be particularized then matter must have a definite form given to it, it must have been converted into an instrument, organic or inorganic. Man is really an organized instrument, and all the organs composing him are special instruments producing a particular result. When a lever is applied

to lifting a weight and actuated by the application of a power, so is also man an instrument to produce a result where the application of the power is inside the instrument itself. Power is in nature transmitted by waves, these waves may be sonorous, electrical, luminous, fluid masses and solid masses. Thus our earth's crust is still under the influence of a great but slow wave which elevates and depresses continents. The same, may matter of the universe be subjected to great waves, that our atmosphere is subjected to great waves; we have also full assurance. There is also no such thing as force, force is a plus of matter alongside a minus of matter. Want of matter is hence the stimulus in all motion. Since life is motion, therefore life cannot exist without want. Would there be no wants there could be no life. Our life is therefore the creation of want. We must contract our muscular tissue, we must make use of our cerebral cells, if we do not, they will die since they are no longer brought into play. Our organs are tools to be used for a special purpose, and they stand in need of thus being supplied with that use, otherwise decay will result. We must change our positions often so as to bring the pressure of the weight of the body on different portions of the skeleton, but still the pressure must be supplied or else the bones become light and spongy. The organs and tissues in the aged deteriorate only in the proportions that they are thrown out of use. The old man not walking has his bones so brittle that they break when he falls. Thus persons that reached old age were such as felt the sting of want as long as they lived or had sense enough voluntarily to take the necessary exercise. A violent catastrophe is however not necessary, not even desirable, a little motion, variable, and often supplied may satisfy the wants we owe our existence to, so as to be less painful or that it may not be felt as pain, but rather as pleasure. We can easily move a ton by taking only twentyfive pounds

at a time, and repeating the same often: but it would kill us if we were to attempt to take it all at once. So in life we must divide our cares, and our exercise into small allotments, and then we will hardly feel the pressure of them. Wants we must be constantly supplying or else death raps at the door. After the organs have been exercised, they require rest, the exercise of an organ seems to bring about an exhaustion, the effort made is something above the normal condition, and thus a condition or a state of rest is necessary for the organ to recruit its former volume and strength. Scholl.)

— Since man is a compound being made up of different grades of animal organizations and mineral crystallizations, the brain being the highest, becomes gradually by its enormous development emancipated from the rest of them so that the little vexations of this world, or the little ailings of the different parts pass unnoticed. S.)

Die Anspornung.

If the proper stimulus to an action is wanting the action will soon be falling off. The moving springs of human actions that are at the bottom, are of more value than the actions themselves. Are these springs lost then hope is gone, the person runs into despair and dementia. If the faculties have not been developed at all in the person, then the moving force will shrivel up like an immature apple; if the faculties have been in a state of development, then despair results running sometimes into mania or fear. Mrs. A. If the moving spring is but a single one and this should be taken away, a breaking down of the mind or mental disease may be the result. All the moving springs in man centre in hope, hope makes the young work hard at their task and stimulates the aged to increased exertions.

Under hope lies necessity. Necessity or want, will keep the hope of the majority of the people upright.

Take away necessity and you take away the prop of hope. Necessity and fear are twin sisters. If necessity is gone, the wish of enjoyment, of life, of greatness must be in place of it, if this is not the case mental disease will follow. The gratification of hunger or pleasure must be held out to humanity, if there is no hopes of either, no efforts will be made, despair, will drown all hope, and everything will take a melancholy turn. Is all pleasure taken away from man, then life is a delusion.

Eine Anspornung muss es geben.

Der Mensch ist auf dieser Welt noch nicht gebor'n,
 Der nicht für sein Handeln bedarf einen Sporn,
 Für Den ist's die Liebe, für Den ist's die Ehr',
 Für Jenen das Glück und für Den das Malheur.
 Kurz jeder hat etwas das ihn animirt,
 Ein Plätzchen wo er einen Stupfer verspürt,
 Sonst stirbt alles Leben, alles Streben, alles Weben,
 Denn'ne ganz kleine Anspornung muss es halt geben.

Weak Lungs and how to make them Strong.

The Atlantic Monthly, Vol. xi. — June, 1863.

657. One-third of the young people and adults die of consumption. The taint of the system could be easily removed prior to its localization. Genuine consumption does not originate from a cold but from tubercles previously deposited. The primary cause is a morbid condition of the organism, which condition may be hereditary but generally the result of unphysiological habits. Just as salt rheum is only the local manifestation of a systemic disease, so is tuberculization but a localization of a systemic derangement, appearing first in the lungs, because the lungs can endure it better than any other or-

gan.

(At first this and similar diseases, consist in a derangement of the forces regulating the system, next in a derangement of the fluids of the system, and so far, they are constitutional diseases; but very soon the cells, the tissues, the different systems become involved, the disease has then become localized, the system improves somewhat by attracting morbid matters or rather materials of surplus, since there are no morbid matters, they being but physiological fluids or semifluids capable of motion, that have accumulated and become nuisible by their presence, or action as a ferment. Thus there was somewhat of an improvment in K—ger after he was attacked by an ulcer of the leg; P—y getting fat after tuberculization, — but very soon the local affection became a focus of infection, and a hindrance to the performance of the functions proper to the organs. Consumption is hence a disease of the constitution, or fluids, next it becomes a disease of the solids, is local and spreads from this local focus. This disease may also have 1st a constitutional origin and 2nd a local origin as was proved by Villemin and others. The inoculation acts in that case as a match would applied to a mass of fuel. A point of matter in a high state of excitement will impart that state of excitement to the particle adjoining it, bringing it up to the same degree of excitement, not by any inherent specificity, but as in the case of fire raising the temperature of the adjoining particles to such a degree that the oxygen of the air cannot help entering into combination, and thus constituting a second and equivalent focus for the adjoining particles, in the case of the ferment or infection we must conclude that an anlogous condition exists. Fermentation raises the heat of the substances, though it be but slight, and in that case oxygen, or oxygen compounds, enter into combination or a splitting

of compounds is affected so that a more highly organized compound remains. Scholl.) 659. M. Benoiston found the mortality from consumption among cotton spinners to be eighteen per Mill. among coalmen forty one per M., among those breathing mineral dust thirty per M. and among those working in feathers fiftyfour per M.. 2.40 per cent would be the average among those working in dust. — M. Deal a young Frenchman went poisoning himself with carbonic acid gas. After lighting the charcoal, in 15 minutes, the candle was nearly out, eyes watery, violent headache, pulse agitated and a sense of general discomfort. After 25 minutes, candle gone out, lamp still burning, temples throbbing and a bad sensation in the stomach. After 35 minutes can scarcely breathe, strange thoughts assail him; symptoms of madness. After 45 minutes, can scarcely write, light gone out, and sight troubled. After 55 minutes, could write no more, he was found dead in the morning. —

660. In 1848, the steamer Londonderry left Liverpool for Sligo with 200 passengers on board. During a storm they were ordered into the steerage cabin 18 feet long, 11 wide and 7 high; the hatches were closed and secured by tarpulin. When the hatches were forced open, 72 had already died, others were dying affected with convulsions and bleeding from the nose, eyes and ears. Among the agencies causing tubercles, foul air occupies the first position. 661. Wholesome air is as equally important as wholesome food. People will hesitate to drink from the same cup with some other person, but to breathe air used up by other persons and contaminated by foul secretions from diseased lungs, is hardly objected to! —

Night Air. At night we can breathe no other than night air, that of some elevation is purer because it contains less foreign admixtures. 662. Dr. James Blake advises consumptives to undertake a long journey with horses and wagons, sleeping out at night.

Moistures in the atmosphere. Dryness of the air is not favorable to consumptives. In the British Isles and in France though more moist than our own country has far less cases of consumption. On the western shores of our continents (Oregon, Washington and California) consumption is hardly known. Dryness of the air gives rise to irritation of the air passages and watery vapors have been used from time immemorial in diseases of the air passages. 663. In England the dew-point from November to March is about 35 degrees, while in the northern states of our own country it is about 16 degrees. Now a room heated to 70 would in England represent a drying power of 35, in America of 54 d. Stoves and furnaces may do some good if vessels of water are placed so that evaporation may go on and the air become saturated with moisture. In the spinning rooms of cloth manufacturers, which have to be kept moist, coughs and throat affections are rare. Every one must have observed that the moist air of a kitchen is agreeable while the dry air of a parlor heated by a stove is almost suffocating, and yet the air in the kitchen may be warmer by ten degrees.

Climate. Removal to a warm latitude is now rarely urged, and a residence at Lake Superior during winter time is the general prescription. 664. Dr. Samuel Torrey of the United States Army shows that while colds and influenzas are more frequent in the northern part of the regular army as 552 to 272, consumption is more common in the southern portion in the proportion 104 73. In the southern divisions there were 708 cases of fever to 192 of that of the north, and whatever tends to impair the constitution as fevers will do, favors the development of consumption in all classes predisposed to it, and in what ever country it may be.

Dress. The seeds of consumption are generally planted in infancy and childhood. A tight waistband arrests

the development of the chest, and bare arms subject the child to colds. 665. When the body is poorly clothed the muscles especially of the arms and legs will develop less even if exercised in 6 months then they would otherwise in one month. It is the flow of blood through the tissues that makes them grow, and warmth as well as exercise maintains this circulation. The value of exercise depends hence upon the temperature of the muscles and a Gymnasium should have a temperature of 60 to 70 degrees Fahrenheit. 665. Perfect health depends upon perfect circulation.

Materials for dress. Flannel is best for infants and men exposed to a great heat, as furnace men and glass blowers. If a baby's skin is irritated by flannel, daily bathing and friction of the skin will remove the extreme susceptibility. Flannel has also the advantage of stimulating the skin so as to maintain a healthy circulation. Patisier affirms that flannel has kept persons in health, while laboring in marshing grounds, canals and drains.

Exercise. 668. Motion is the great law of the universe. It is the first instinct of animal life. In our common schools physical training ought to be alternated half-hourly by study. 669. Dr. Rush says; "The remedy for consumption must be sought in those exercises that give the greatest vigor to the constitution. Lord Bacon asserted that there were no diseases among his pupils, that were not amendable to gymnastics and calisthenics. Dryden sang: "The wise for cure on exercise depend." Horse-back-riding is excellent exercise, but walking is most available. It is however not general exercise that is most beneficial to a consumptive person, the exercise ought to be special, that is, adapted to strengthening the weak muscles of the chest, and bring about an expansion.

(This is done by special motions upwards and backwards of the arms, by contracting the elevators of the

ribs, causing expansion as is done in inspiration, by contracting the depressers of the ribs to impart the power of full expulsions of the air guarding against emphysema; by the cultivation of the voice, as will be done in reading aloud, and moderate and judicious singing. Exercising the voice, sweeps the mucous membrane with a current of air, stimulates them to regular action, prevents swelling of the membrane and expels the secretions, hindering stagnation. If persons were to breathe forcibly through the nose as is done in running they would not only prevent catarrh and polypus, but would succeed in the majority of cases of curing them. When the mucous membrane is not swept by a current of air then it will deteriorate and become useless. What friction is to the skin, that is a brisk current of air to the lungs. In order to keep any organ or any surface in a sound condition the proper stimulus must be applied, the stimulus to which it owes its existence, or else it will die or deteriorate, the proper stimulus is use, or the fulfillment of function. The eye must be applied to seeing large and small, far and near, or else it will become curtailed in its function. The muscles must be made to contract, the glands to secrete, the bones to support, the brain to think and this functionizing wants to be directed in both directions, to the minute and the large, to the slow and to the fast. The first implies space the latter time. Time and space are the great modifiers of organic structures. Scholl.) 670. There is no benefit from prescribing a walk to a person who has well developed legs but contracted shoulders. Well directed movements of the muscles about the chest will accomplish more good than walking. Symmetry in body and mind, that is, an equal and proportionate development of the various organs of the body, constitute perfect health. If the mind is not symmetrically developed, some of its parts having been left behind in the development for want of exercise, then

insanity or stupidity will frequently be the result. Symmetry lost in the body will bring on disease in those parts not sufficiently developed, thus if the lungs are too small for want of development, then an exaggerated exercise will bring about overstraining of the lungs, may be, spitting of blood, or inflammation, or a small part getting accidentally destroyed will leave too small a part to carry on properly the function of respiration, thus disease and death follow. It is hence a necessity to see whether all our organs are properly developed, so as not only to be able to meet all ordinary demands which may be made upon them, but to have also a little surplus on hand to be called upon as an arrear-guard in the hour of extremity. Excessive development of parts has also its disadvantages, as well as under-development. Athletes neglecting their brains and not having other parts proportionally developed, die early, in spite of their strength. Excessive development, takes also a great deal of time to keep up, which would not pay in the end, or cannot be kept up. A person may be very strong and yet have broken down internal organs, and another person may be comparatively weak but with sound organs all through. In order to develope some parts excessively so much effort is necessarily called into play that the other parts are necessarily injured thereby. Scholl.)

671. Company in exercising is of the greatest importance. When alone, dumbbell exercises are soon dropped and so it is with all other exercises, company makes them attractive, seclusion makes them monotonous and easily forgotten. The pulling up of the arms, patient resisting, or having them extended, against proportionate resistance is capital exercise for consumptives.

The Abuse of Physical Exercise.

The WESTMINSTER GAZETTE, observes: "Those who have gone through the severest training become in the

end dull, listless, and stupid, subject to numerous diseases, and in many instances the ultimate victims of gluttony and drunkenness. Their unnatural vigor seldom lasts more than five years. It was especially remarked by the Greeks that no one who in boyhood won the prize at the Olympic games ever distinguished himself afterward. The three years immediately preceeding seventeen are the years of great mental development, and nature cannot at the same time endure any severe taxing of the physical constitution. The evils of excess outweigh by far the evils of deficiency."

To Consumptives.

I wish to say a few words—says Lawson Long, M. D., in the SPRINGFIELD REPUBLICAN—to "whom it may concern," on the use of the swing—as a preventive and cure of pulmonary disease. I mean the suspending of the body by means of a rope or chain fastened to a beam at one end and at the other to a stick three feet long, convenient to grasp with the hands. The rope should be fastened to the centre of the stick, which should hang 6 or 8 inches above the head. Let the person grasp this stick, with the hands two or three feet apart, and swing very moderately at first—perhaps only bear the weight if very weak—and gradually increase, as the muscles gain strength from the exercise. The effect of this exercise is to elevate the ribs and enlarge the chest; and, as nature allows no vacuum the lungs expand to fill the cavity, and increasing the volume of air.

I have prescribed the above for all cases of hemorrhage of the lungs and threatened consumption of 35 years, and have been able to increase the measure of the chest from two to four inches within a few months and always with good results.

Physical Culture.

Dr. G. B. Winship illustrated his arguments by several remarkable feats of strength. He took an ordinary sized barrel of flour and lifted it with his hands alone on his shoulder, and without any further aid, raised from the ground 926 pounds of dead weight. He exercised with dumbbells weighing one hundred pounds, and pulled himself up by means of his little finger.

Dr. Winship exhibits all the strength and more than the strength of Heenan applied to useful purposes, applied and increased steadily not for a few weeks, but for months and years; cultivated upon scientific principles and for purposes to which none can object but which all must admire. None of his ancestors were distinguished for any remarkable powers of this kind. He himself was not by any means remarkable for strength when he began, and being a student in Harvard University, nothing but the desire to promote the most perfect bodily health and strength, and to try how far this sort of a thing could be carried, has placed him in his present position before the world. Indeed it is worthy of observation that it is in the peaceful occupations of daily industry that all the champions are made strong and that afterwards when they commence their fights their strength rapidly declines. Heenan acquired his growth and his enormous strength as a blacksmith, and Sayers the power of muscle in his arms from carrying bricks. It is the daily pursuits of a man that determine his character, and also that form and determine his maximum of physical strength.

But it is also a well known fact that mind has much to do with physical power, especially the power of endurance. Moral cultivation, that is, the cultivation of the will, and all the higher principles of virtue, have a still greater effect, so that perfect physical training cannot be carried on for the prize ring, but must be attain-

ed by men like Elihu Burritt or Dr. Winship, rather cultivating physical, in connection with mental and moral development. There is, indeed, a reciprocal action up to a certain point. The mind strengthens the body and the bodily strength and discipline in their turn reactively strengthen the mind. Those who carry off the prizes at Oxford and Cambridge are usually the hardest rowers, wrestlers and riders in the University.

The climate of Florida.

The climate of Florida, which is similar to that of Nizza and Cairo has heretofore been considered as extremely favorable to persons affected with diseases of the lungs. A writer in Harper's Magazine complains that he has experienced at St. Agustin, several times within a few weeks, sudden changes from a summer atmosphere to that of icy coldness. The mild land breeze being supplanted by a cold brackish sea breeze, is very uncomfortable to persons laboring under pulmonary diseases. As a rule the climate is so mild in winter that persons may remain out doors most all the time, and this is the reason why so many thousands more of persons live here during the winter months, but the great objection is the oppressiveness of the atmosphere, the heat being more oppressive than August-days in Connecticut. The air seems to be lacking the influence of exhilaration the same as other subtropical states.

Open Air.

The most of us are apt to think, in these cold and piercing wintry spells, that if we are well sheltered, well-fed, well-clothed, and well-warmed, we shall be able to snap our fingers in the face of Old Boreas, and let him blow his bugle till he is tired. But presently Nature throws out her silent hints. We grow languid: our fire is not as pleasant a fire as it was; we don't care so much for our food as we thought we should; and things generally go wrong with us. Open air is what we want—and exercise: that brings healthy digestion, sound sleep, and high spirits.

De l'entraînement
Des Pugilistes.

From

Supplement à l'annuaire
de Therapeutique, pour 1861
par A. Bouchardat
Paris; Germer Baillière.

1861

Scientific Hygiene is the best means to combat our most implacable enemies, old age and premature death. 182. It is easier to keep a house in an inhabitable condition than to erect one out of ruins. Boxing is in reality the principle means for consolidating and perfecting health. 183. The boxer enters the arena naked to the umbilicus. The fights last an hour and a half with 30 or 40 short interruptions. In the celebrated fight between Maffey and Mc'Carthy which lasted four hours & forty-five minutes, either the one or the other fell stunned 196 times. 184. We observe here, a prodigious force, singular adroitness, and an insensibility to blows beyond belief, and still there is perfect health. All this is accomplished by regimen, by a special education called training. 185. A boxer weighing 128 pounds will lose 8 pounds the first week and regain it in another. Meanwhile the skin has become soft and pliable, clean, free from eruptions and translucent. 186. In the year 1740 the famous boxer Broughton lost the championship he held for sixteen years, just because he neglected training, receiving a blow on the forehead, and such a swelling resulted that it closed his eyes. The same happened to the negro boxer Molineaux when fighting Cribble for 50.000 pounds Sterling. Molineaux being of colossal stature,

and a herculean force, despised preparing, while Cribble weighing 188 pounds commenced training under Captain Barclay, reducing his fat so that he weighed 152 pounds. 187. Sir John Sinclair assures us that training enables also the bones to offer greater resistance, and are not so liable to fracture. Athletic gymnastics diminish in a remarkable degree the sensibility towards pain, which seems to be in the ratio of muscular development, (just the opposite of nervousness the great demon of our times. S.) By this the senses do not lose anything of their acuteness, especially the eyesight becomes exceedingly accurate, the hearing fine, and the spirit light, the sensation of well-feeling and great confidence in one's self.

(The use of an organ perfects it, and the execution of a power gives pleasure, the possession of an ability gives self-confidence, self-satisfaction and self-sufficiency. If a strong person mentally or physically, receives a blow or a strong opposition his self-confidence, is not thereby shaken, but he is stimulated to renewed action and to renewed fortifications so as to make his self-confidence secure. The weak person feels the blow, actually because his self-confidence is small, he feels himself mentally annihilated, thus it is a kind of death to him, and physical annihilation will soon follow. Every organ, every faculty and every state require development in such a degree that external impressions may be successfully rebutted. To have the ability to conquer is a happy state, to conquer is pleasure, to conquer is to rise, while the opponent falls. The nature of the tiger reappears in a refined form in man, constitutes his greatness and happiness. Self-preservation in a refined condition. S.) 187. Athletic training for the boxer and runner divides into, 1st. Debarassing the body of superfluous fat by sweating and diet and, 2nd. Developing the muscles of the body and giving energy to the functions of nutri-

tion. 188. The athlete is to be trained to coolness of action, to courage and to equality of temper. 190. It is established beyond a doubt, that the nutritive function may be directed towards the perfection of this or that organ at will, and a modification of the organs brought about so as to meet a certain demand, and all what is necessary is proper training.

(To be sickly is, not to have the power to withstand the impression causing the sickness, the person is constantly conquered and thus he feels annihilated not only in body but also in mind, training only is able to overcome this tendency, medicine is only to assist in removing the havoc made, of clearing away the ruins, but to prevent, there is no such thing in medicine. Medicine can give you no power over the elements, it can give you no power to conquer, and man is really nothing else but a fighting creature, he has to fight with the elements, with himself and with his fellow-beings, to be able to conquer, a person must have a store of power on hand, he must be rich in muscular development, rich in digestive capacity, rich in resistance to impressions, while the senses must be like a good stomach, ravenous, and able to digest anything presented to them. Also the senses are to the mind what the stomach is to the body. And if a person is well off and has some property to back him, so is this also a power, an arrear-guard of great assistance and a spring of courage. Devouring and repelling are the two processes of life.

Debility of any organ can only be overcome by using that organ and thus increasing its nutrition, a crooked spine cannot be cured by medicines, the weak stomach of a sedentary person cannot be made to digest by medicine, a mind run down for want of use, cannot be made to think or act correctly by medicine. Judicious training physical and mental, perceptive and rejective are the only means of cure. Medicines will do for an

accidental mishap, where it can be applied in a similar capacity, as sticking plaster to a wound, as forceps to extract a thorn, or an escharotic to remove a corn or a wart. Scholl.)

History. 191. Ancient gymnastics divide into 1st, The physical training of the citizen and 2nd, The physical training of the athlete. Socrates had the citizens of his Republic repair to the gymnastic grounds until they were 30 years of age, then exercise was slightly diminished and more attention paid to the intellect until 35 years when the mind had arrived at maturity, it was then directed towards philosophical studies and contemplations for the purpose of directing the manners of the younger citizens. Sufficient exercise to keep the body in good health and the mind in good spirits, was kept up to the end of life. 192. Socrates followed his precepts to the letter, and at 60 he carried arms in behalf of his country and was one of the most valient men that saved the Athenien army from annihilation in the Peloponaccean war, this was owing to the continual exercise he took; and at an advanced age he was able to participate in the chase. Pompeus at the age of 55 delighted in thrusting the lance or hurling the javelin, which he could do as well as any soldier in his army. 193. For the education of Athletes, men of favorable endowments were selected. The quantity some of these could eat was enormous, and so was the amount of effort they could muster. Galien says: "The training of athletes disposes to hæmoptysis and apoplexy. The life of an athlete is short. England has the credit of having invented and perfected the pugilistic art. At the commencement of the reign of George the III the public mind was especially directed to the constant and precise results obtained by these exercises. 194. One of the first works printed is "The art of manual defence," printed by Kearsley, London, 1789. by a pupil of the celebrated pugilists

Humphreys and Mendoza. The pupil is trained to sobriety, to a gradually increased exercise frequently repeated, to friction, to the cold bath, and to cleanliness.

(The ancients used baths frequently after which they anointed their bodies and dusted themselves over with a powder. This may have been necessary on account of the warm climate to prevent the too great exhalations and consequent dryness of the skin. Living in a room constantly heated by hot air, inunction of the face is also necessary. Scholl.)

The pupil is allowed to drink only very little, and never any spirituous liquors; he is to nourish himself with stale bread, beef or mutton. Milk, cake, pork and beans are prohibited. The ancients gave also very little drink to their athlete's and insisted on the great importance of such a rule. Mr. Wood, librarian to the Count of Essex cured himself of a great corpulence by a particular regimen, a part of which was to drink but little. Dr. Cullen remarked that the surest way to fatten calves is "to give them plenty to drink, and the milk of their mother."

Pythagoras, himself a director of a gymnasium, first allowed his pupils to eat some meat, but up to the time of Galien it was pork or sometimes goat what was used while the English boxer is enjoined from using pork at all. 197. The exercises are pushed until a light sweat breaks out, favored by being rubbed and covered up in bed. — The second work is by R. Cootes London. — "The art of self-defence or a treatise on the principles of the English pugilist. He says: "the training of Captain Barclay stands first, but may be rather too severe on the whole. 198. Hammer-lane, boxer of the modern school trained himself at the anvil, he being a blacksmith, and found that his health and strength kept hand in hand. Six weeks is required for training, whether for the course or the combat. The exercise must be very gradual at

first, and graduated day by day as the strength increases. Rise at 6 A. M., wash with care and walk two miles before breakfast, after breakfast walk again two miles, interspersed with runs of two or three hundred yards, and finish by a run of a mile for bringing out the sweat, after which drying and energetic friction is to be applied. After dinner, dumbbells, battledoor, shuttlecock and croquet may be used. 101. Most carefully is the smoke of tobacco as well as liquors to be avoided; also milk soups and spices. The meals must consist of lean meat, fat meat is hard of digestion and makes a person helpless. One evacuation of the bowels is necessary which should take place immediately after breakfast. 202. The pupil should be weighed every day and when the weight of a good condition is got, then exercise is to be reduced but the little runs of two or three hundred yards must be continued to develope a long breath. If the training is for the race course, the runs must be multiplied and continued longer gradually; if for combat boxing and dumbbells must be made use of. 203. The fastest English runner who ran a mile in 4 minutes and 46 seconds could do so only when confined to his accustomed diet, cake and oatmeal-gruel. Each ounce of superfluous weight is a chance for defeat, the proper condition will therefore have the gain of the combat. 204. The treatise of Captain Barclay is given in "Fistiana" the boxer's annual. — Oracles of the ring, prize battles from 1700 to 1854, London, 1855.

Attributes of a good Boxer. They are: Courage, Knowledge, Temperament, Training and a working condition. 205. Knowledge is the better part of valor, without knowledge, a natural courage, be it ever so great is but an unpolished diamond, of great worth but wholly useless. The first epoch of the science of boxing dates back to 1743 when Jack Broughton, at his amphitheatre emitted the first rules for the guidance of the

boxer. The second help the science received was at the hands of the famous Mendoza 1780, and the third when the immortal Jackson defeated Mendoza in 1795. The constitution of the pugilist must be of good metal, not fragile, but unimpressible as the cement on the walls of Babylon, without vigor of the constitution, the courage of a lion amounts to nothing. A person may have all the required qualities, but without training he will be defeated at the hands of one who underwent training.

The boxer, wrestler, runner, jockey, rower and swimmer have to accomplish a great deal in a short time, and if the great masses would imitate them in their training, although following their profession as usual, they would pass their lives in a more agreeable way and be enabled to follow their duties in a better way and with more satisfaction. Instead of finding drugstores at every corner we would have baker- and butcher-shops, and instead of having the British College of health, or rather of diseases we would have a college of athletic sports.

Look at the American Indian, his life is a perpetual school of training, remark his acute vision and even smell, his agility, swiftness, precision and strength of muscles, his courage and sagacity, his ability to stand privations of food, the inclemencies of the weather, and his doing without sleep and working by night. Now remark what civilization has done for them; the introduction of alcohol and luxuries has transformed them from a race of warriors into one of women and slaves.

Education of the Pugilist. What is to be imparted by training is a greater force, agility, respiration, and what is called "bottom" that is endurance, such impart self-confidence and courage. The pupil wants to be inspired with confidence especially if he is timid and discouraged. 212. The skin requires special attention, washing with soap and water, and water alone a second

time, friction with a coarse towel until the skin glows, a cold bath may be taken daily with advantage. Sir T. Parkins a professor of wrestling says: "Give us a man with the scurvy instead of rheumatism, and we will impart blood and force to him." The condition of a man is always judged by his skin. Transpiration, friction and diet make eruptions disappear. 218. The weak parts of the body require to be rubbed with the hand or towel every morning, which is very useful in rheumatism, and pain in the limbs. A fine skin is the sign of good health in man as well as in the horse. It is through the skin principally that the fat about the heart, kidneys and intestines can be got rid of. 219. For reducing by sweating, Jackson recommends heavy clothing while exercising. No curtains about the bed. Three-fourths of what you eat and drink passes off through the skin. (?) 221. Friction applied to the skin attracts a larger quantity of blood to the surface, the blood is thus enabled to throw off any ingredient that may be nuisible, by the sweat and the formation of epiderm. Rubbing the body daily has a powerful effect on the respiration and appetite. 227. Chafed parts should be anointed with camphorette olive oil.

Diet. 230. Beef and mutton, no soups, fish and pastries, little pork and no fat. Irregular meals are bad.

Debility. 234. Under this head may be classed excesses of whatever nature they may be. 241. The means for regaining health are exercise, diet and rest. Bad habits should at first be reduced degree by degree and finally left off.

(If the drunkard, the user of tobacco, etc. would heed such a rule, it would in a short time be possible to lay off the habit, because the habit would become less and less strong every day. It would be easy to break off a little every day while it would be impossible to break off wholly at once. Scholl.) 244. For burning at the

stomach do not drink fluids, but move your jaws from five to ten minutes as you would in chewing so as to cause the saliva to flow, which will when swallowed accelerate digestion. A crust of bread may also be chewed and swallowed. 247. Colds are generally contracted by leaving a warm room (the lungs being in a heated condition and the capillaries dilated) and respiring the cold air from out doors.

(Feb. 1st, 1876. While going to Matthew's in the night, the air was exceedingly cold, and having to face it I felt a constriction of the air-passages due to the contractions of the bronchias and capillaries, so that my breathing was very much accelerated although I did not walk fast at all, still I felt tired and experienced a little pain in my right mammary region. S.)

The precepts of training may be classed under, 1st. Evacuents, 2. Alimentation, 3. Care of the skin, 4. Exercise, 5. Pure air, 6. Moral influence, 7. Temperance, and 8. Avoidance of alcohol and other stimulants. 249. To drink but little is a good precept. 250. In our cold climate greasy substances may be absolutely necessary to health. 251. Exercise, pushed to a light sweat is excellent, but in persons not used to exercise, care must be taken that the body does not become chilled, nor followed by reaction.

Taking care of the skin, it is not only necessary to wash the body with cold water, but the skin has to be rubbed energetically with a coarse towel, or a brush of caouhouc of Galante. This friction may be followed by an application of a few drops of olive oil scented with vanilla or benzoin.

Moral influence plays a great part in the health of mankind. I have observed that the sugar is augmented in the urine of a diabetic patient after anger, sorrow or abuses.

Therapeutic application of the method used in

training. 255. I shall apply my remarks to the diseases of riches, hypochondria and nervous affections. In cases of neurosis gymnastic exercises are of especial utility. In the hospital for infants according to M. Blanche 108 cases of chorea, 34 were cured by 19 gymnastic exercises, 68 by 39, and 6 grave cases by 73 exercises. Coelius recommends the jostling in a carriage carried by mules (gestation) for epilepsy. In hysteria training is suitable. In the diseases of misery, glycosuria, albuminuria and tuberculosis, exercise, flannel and regimen will do good. Carbonate of ammonia is good in glycosuria. 258. In the diseases of the rich, as obesity and gout, there is no remedy that may combat such diseases as well as exercise, or what might be substituted for it. Sydenham based his treatment of gout on exercise. 260. Galien recommended exercise for obesity. 262. Medical gymnastics existed already before Hippocrates and the name of Iccus and Herodicus have come down to us. The latter assures us that he cured phthisis by exercise, and Celsus and Aretius had recourse to exercise in chronic complaints. Galien wrote on it, and Mercurius applied gymnastics to internal complaints. In all digestive complaints the ancients made use of exercise. For acid eructations, morning exercises, and for painful digestion Mercurius recommends the dance, even for the aged. Empirics, dogmatics, syncretists, organists and the adherents of Herophilus and Erasistratus concur in lauding exercise for rebellious and non-inflammatory diseases. Herodius and especially Petronas carried exercise too far in acute diseases and Hippocrates accused them of killing their patients. The school of Cos showed considerable wisdom in their precepts. Of modern authors Chomel recommends exercise for digestive ailments. Moderate exercise is necessary for a good digestion and it is proverbial that a man digests with his legs as well as with his stomach. In ailments of the liver

and spleen accompanied by fever, exercise is the principle remedy. Aetius prefers riding on horseback.

For dropsies, active exercise is mentioned by Celsius. He orders also abstinence from drink, vomiting, the sand bath and the hot oven. Hypocratus does not generalize the precepts but states that great results have been obtained by exercise pushed to its fullest extent.

Catching Cold. Dr. Thomas Inman mention that he saw it stated in "Copelands Dictionary," that colds are generally contracted by passing from a cold moist air to a hot dry one. This he stated was principally the case with him and he compared the cold in a person's nose, throat and lungs with a chillblain on a child's foot, he thinks them caused in the same way.

Music as a means of cure. Marquis de Pontecoulant in his "*phenomones de la musique*" mentions the case of a girl subject to epilepsy, who had her paroxysms prevented by hearing music, and was finally cured by this means. Another girl raving under the influence of typhus fever became quiet and regained her senses under the influence of music. A lady was restored to health by a piece of vocal and instrumental music by Charles Formes.

Arsenic eating. The records of druggists show that ladies consume large quantities of arsenic to whiten the complexion. They may be known by the deadly whiteness of their cheeks and lips. A lady in Belfast lately died in consequence of taking too large a dose. Corrosive sublimate is used for the outside of the skin by them.

Tubercles would be prevented altogether according to the opinion of Dr. H. McCormac of Belfast, if care was taken not to breathe over again the air that has already been breathed once.

Dr. Neuman's
HAUS GYMNASTIK

Leipzig 1859.

C. F. Amelang's Verlag. (Fried. Volkmar, Sen.)

Author of, 1. Kurze Darstellung der Swedischen Heilgymnastik. 1852. 12 Sgr.

2. Therapie der chronischen Krankheiten. 1857. 2 Thl. 25 Sgr.

3. Lehrbuch der Leibesuebungen, 1256. 3 Thl. 10 Sgr.

4. Die Athem-kunst des Menschen, 1 Thl. 10 Sgr.

House-gymnastics or dietetic gymnastics are executed without the aid of apparatus, or a special place, and consist in the execution of movements by the component parts of the body to secure a harmonious development of parts and an efficient function thereof for the purposes of life. The value of muscular exercises has from remote ages been acknowledged but it has generally been overlooked that the senses and the brain require similar education. As the muscles admit of being educated to velocity and to power, to delicacy and to coarseness just so the senses and the powers of the brain may be trained to the minute and the gross, to the slow and to the fast. The eye must be trained to the minute and to the gigantic, to the near and the far equally well up to a certain point, and the same rule holds good as to all the other senses and powers. Dietetic gymnastics should be made to embrace the exercise of the various organs and apparatus. The stomach, liver and pancreas must be supplied with a proper stimulus, to cause the stomach to pour forth the gastric juice, the liver the bile, and the pancreas the pancreatic juice. Proper food would act here as the

stimulus, the same way as the will is the stimulus to muscular action. A stimulus is an independent existence and acts as a centre of attraction to the neighboring parts, which become estranged from the remainder of the organism, or somewhat paralysed and so is the will not something what is sent to the muscles, but some waves of nerve-tissue are attracted by the will, and are arrested by it in a certain part of the brain so that the channels going to certain muscles have become partly paralysed and in the proportion that this paralysis is complete, in that proportion will be the muscular contractions. — Contractions must be alternated with rest, this is a universal law; thus everything in nature, whatever it may be, food force or medicines have but a dual influence, that of stimulation and sedation parallels of action and rest. We have hence but two classes of medicines, two classes of food, two classes of force, the human organ is the middle; it lies between the extreme; and remedies, food and force are violent in their action as they are further removed from this organic middle. The human body is the middle of the magnet, the poles representing the two different forces and these forces are exactly in counter-balance, and if these polar forces would move the neutral point would move also to one or other side. All this may indicate that labor should not exceed 12 hours in the 24, that the stomach should be employed in digestion but 12 hours and so forth. — And it may mean that a person must have just as much displeasure as pleasure in life. The centre of equanimity would move to one side or the other, so as to keep the balance, so that what would be pleasure to one would not be pleasure to another. This would teach us to use the most moderate stimulants; food, medicines, forces and pleasures, thus we avoid, the possible great fluctuation on the other side, the economy becomes not so easily deranged by the untoward forces. — This state of

things probably has the strongest claim to be called happiness. Happiness would then represent the smooth surface of the sea, the polished mirror, that reflects the rays but does not retain them. -- Man is hence the neutral point of the magnet, the poles are the forces that affect him, and the less this neutral point is tossed from side to side by always varying forces disturbing the poles, the more happy and quiet will the person be. — The magnet is produced by a wave motion of electricity upon an impenetrable medium or matter, it is the matter that participates in this wave motion on the surface, which wave motion coils upon itself to a certain extent, the same as a storm wave coils upon itself, and the part participating least in this motion represents the poles. The creative action is strongest at the equator, at the neutral point of the magnet, and the poles or disturbing forces are farthest off. The Magnet and Man demand a strict comparison, so as to find out from the known what we do not know.

From the preceding it will be clear why the various systems of medicine are about equally successful, and why even the quack and igonramus will occasionally perform a cure. It will further appear, that it is not drugs or powerful drugs that are universally demanded, although they may in judiciously selected cases be highly beneficial, but that by diet and exercise the object may be obtained. —

Dietetic gymnastics comprise. 1. The various positions of the body or its parts. 2. The various motions of the body or its parts. 3. The execution of the various functions of life. 4. The execution of the psychic functions.

The movements as well as the positions may be active, passive or mixed, according as force is consumed or not. The mixed or duplicated movements owe their perfection to the Swede, Henrik Ling. Passive motions are

when a part is percussed, vibrated, rubbed or kneaded.

Dietetical Respiration.

Dr. Neuman says: "Take a long breath, hold it from five to ten seconds, then expire, and repeat after a little while. Much depends on the retention of the air in the lungs, which is generally expired too soon; there is little danger of holding the breath too long. Breathe through your nose with your mouth shut. For asthma take a long breath and hold it as long as you can.

Dietetical muscular motion.

The exercises of the muscles should be so as to keep them for a long time but not too violently under action. At the end of a movement a rest of a few seconds should be maintained. All movements, active or passive should be followed by two forced respirations so as to supply the blood with the necessary oxygen for its consumption in the production of force, whether muscular or nervous. For headache, neuralgia and rheumatism make use of flagellation and friction. For bleeding from the nose, forced respiration. For overcoming a tendency to consumption, percussion of the chest. Neuman's Terminology of the various positions, the body may assume and movements that it may execute, is as follows: —

Positions and Movements.

(Haltungen und Bewegungen.)

Standing (Steh)	positions. (haltung.) Movements of (Bewegung)	Flexion.
Sitting (Sitz)		(Beugung.)
Kneeling (Knie-)		Extension
Hanging (Hang)		(Streckung)
Lying (Liege-)		Twisting
		(Drehung.)
		Rotation
		(Rollung.)
		Guidance
		(Führung.)

Positions. (Haltungen.)

(Beinstellungen)

Of both legs:

Of one leg:

Fluegel-	} Steh- Knie- Sitz- Lieg- Hang- } Haltung.	R. u. L.	{ Schwung- Schweb Stoss- Sprung- Hock- Trepp- Luft	} Steh- Knie- Sitz- Lieg- Hang- } Haltung.
Schluss				
Knick				
Kauer-				
Zeh-				
Fers-				
Spalt-				
Spreitz				
Gang-				
Ausfall-				

Remarks: —

In Fluegel-stehhaltung, the heels are right close together and the toes everted, while in Schluss-stehhaltung, the feet are kept close together for their length. In Knick-stehhaltung the knees are bent outward and in the Kauer-stehhaltung the knees are bent forward.

In Zehstehhaltung the position is on the toes and in Fers-stehhaltung on the heels. Spalt-stehhaltung the feet are moderately parted and in Spreitz-stehhaltung they are parted as much as possible.

In Gang-stehhaltung the feet are in the position, they are in after the step completed, and in Ausfall-stehhaltung the feet have the position as when a running step has been taken.

In Schwung-stehhaltung the leg is drawn forward from behind as in walking, in Schweb-stehhaltung it is held off swinging to the side of the body and in Stoss-stehhaltung the leg is projected in front as is done in taking another step.

In Hock-stehhaltung the right or left leg is lifted up and held directly forward at a right angle with the body and in trepp-stehhaltung, the leg held as above, is turned diagonally outward as in ascending a flight of stairs.

wend it is twisted either to the right or the left.

In Kopf-krumm the head is bent forward, and in Kopf-beug it is bent backwards.

In Kopf-links- und rechts-schief the head is bent to the right or left side, and in kopf-links- und rechts-wend it is twisted to the right or left.

Positions (continued.)

Of the arms: —

(Armstellungen.)

$\left\{ \begin{array}{l} \text{Streck-} \\ \text{Stern-} \\ \text{Klafter-} \\ \text{Reck-} \\ \text{Sprech-} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{Sprech-} \\ \text{Reck-} \\ \text{Klafter-} \\ \text{Stern-} \\ \text{Streck-} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{Steh-} \\ \text{Knie-} \\ \text{Sitz-} \\ \text{Lieg-} \\ \text{Hang-} \end{array} \right\}$	} haltung.

Of the forearms: —

(Unterarmstellungen.)

$\left\{ \begin{array}{l} \text{Eck-} \\ \text{Fluegel-} \\ \text{Wehr-} \\ \text{Heb-} \\ \text{Ruh-} \\ \text{Schutz-} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{Sturz-} \\ \text{Flug-} \\ \text{Schutz-} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{Steh-} \\ \text{Knie-} \\ \text{Sitz-} \\ \text{Lieg-} \\ \text{Hang-} \end{array} \right\}$	} haltung.

Explanations: —

In Streckhaltung the arms are stretched out upwards, in Stern-haltung the arms are directed diagonally upwards at an angle of 45 degrees, in Klafter-haltung they are stretched horizontally outward, in Reck-haltung hor-

izontally forward, and in *sprech-haltung* the arms are let hang downwards by the side.

In *Streck-sprech-haltung* the left arm is held in *Streck-* and the right arm in *Sprech-haltung*, and so on with all the other positions. The first member of a compound word applies always to the left side.

In *Eck-haltung*, the elbow bent describing a rectangle, the arms are crossed on the back, in *Flugel-haltung* the arms are held akimbo, hands resting on the hips, in *Wehr-haltung* the forearms are held vertically upwards and forwards while the arms are held close by the sides, in *Heb-haltung* the arms are held in *Klafter-haltung* while the forearms are bent upwards at right angles with the former, in *Ruh-haltung* the hands are crossed on the back of the head, in *Flug-haltung* the arm is held in *Reck-* and the forearm vertically upward, in *Sturz-haltung* the forearms and hands are held downwards and forwards as is done while falling.

Eck-sturz-haltung means that the left forearm is to be held in *Eck-* and the right forearm in *Sturz-haltung*.

Wechsel means to change from one position to another.

Positions of questionable utility: —

Fluegel-schluss-kniehaltung.

" " *sitzhaltung.*

" *kurz-sitzhaltung.*

" *lang-* "

" *links halb lang sitz-haltung.*

" *bein lieg-haltung.*

Heb-fass rumpf lieg-haltung.

Bein vorwärts lieg-haltung.

Rumpf vorwärts lieg-haltung.

Spann-hang-haltung.

Doppelt stoss lieg-haltung.

Wechsel wend-stehhaltung.

Heb-fass doppelt stoss rumpf-lieghaltung.

Heb-fass links schief rumpf-lieghaltung.

Movements. (Bewegungen.)

Kopf- Rumpf- Becken-	}	{ Vor-	}	{ Beugung.
		{ Ruck-		{ Streckung.
		{ Links-seit-		{ Drehung.
		{ Rechts-seit-		{ Rollung.
		{ Wechsel-seit-		{ Halbrollung.

Explanations: —

Kopf-vor-beugung the head moves out of Kopf-beug into Kopf-krumm, in Kopf-ruck-beugung the head moves out of Kopf-krumm into Kopf-beug.

In Kopf-links-seit-beugung the head moves out of kopf-links-schief into the position of kopf-rechts-schief, and in Kopfrechtsseitbeugung the motion is in an opposite direction.

In Kopfwechselseitbeugung the head moves first from the position of links-schief into that of rechts-schief and then back again.

In Kopf-streckung the head is brought into its natural upright position out of any other abnormal one, hence the modifying terms vor, ruck, links, rechts, and wechsel find no application in this motion.

In Kopf-drehung, links-seit, recht-seit and wechsel-seit, only find application. In Kopflinksseitdrehung the head moves out of kopfrechtsseitwend into kopf-links-wend and in Kopf rechts drehung out of kopflinks wend into kopfrechtswend. In Wechsel kopf drehung the head moves from kopflinks wend into rechtswend and back again.

In Kopf-rollung the terms links, rechts and wechsel are most applicable. In Linksrollung the head moves from beug or krumm to the left about in a circle and in Rechtsrollung the head moves in an opposite direction. In Wechselkopfrollung the head moves first one way round and then the other way.

Movements of the Limbs.

Left	}	Arm-	Flexion and Extension.
Right			{ Sideward } upward and down-
Double			{ Forward } ward Guidance.
Change			Inward and outward Drehung. Rotations and semi-rotations.
		Humerus	Flexion and Extension. { Sideward } upward and down- { Forward } ward Guidance. Inward and outward Drehung. Rotation.
		Radius	Flexion and Extension. Inward and outward Drehung.
		Humerus-Radius	Flexion and Extension.
		Hand	Flexion and Extension. Side Guidance. Rotations and semi-rotations.
Left	}	Leg	Einung und Spaltung.
Right			Flexion and Extension.
Double			Sideward Erhebung und Senkung
Change			Inward and outward Drehung. Rotation and semi-rotation.
		Femur	Einung und Spaltung. Flexion and Extension. Inward and outward Drehung. Rotation.
		Tibia	Flexion and Extension.
		Femur-Tibia	Flexion and Extension. Sideward Flexion and Extension.
		Foot	Flexion and Extension. Rotation.

Semi-Rotations.

Kopf- { Krumm-rechts-links-schief-beug.
 { Beug-rechts-links-schief-krumm.
 { Rechts-schief-krumm-beug-links-schief.
 { Links-schief-krumm-beug-rechts-schief.

Rumpf- { Neig-rechts-links-schief-fall.
 { Fall-rechts-links-schief-neig.
 { Rechts-schief-neig-fall-links-schief.
 { Links-schief-neig-fall-rechts-schief.

Becken- { Stoss-rechts-schief-links-schief-schwung.
 { Schwung-rechts-schief-links-schief-stoss.
 { Links-schief-stoss-schwung-rechts-schief.
 { Rechts-schief-stoss-schwung-links-schief.

R. u. L. { Schweb-stoss-halbrollung.

D. u. W. { Schweb-schwung-halbrollung.

Flexion and extension into different planes:

Doppel-arm-klafter- { Streckung.
 { aufwärts-streckung.
 { abwärts-streckung.

Rumpf-neig- { Streckung.
 { rechts-streckung.
 { links-streckung.

Catechismus

der

Turn-Kunst,

von Dr. M. Kloss. Third Edition,

Leipzig. J. J. Weber, 1867.

The Pentathlon of the Greek consisted of the exercises of running, jumping, wrestling, and throwing the disk and the spear. It was counted for the greatest honor to gain the olive-wreath at the Olympic games.

The second period of gymnastic development falls in

German Knighthood, which becoming defunct in the sixteenth century, was followed by a period of physical stagnation accompanied by a misled pietetic asceticism.

John C. F. Gutsmuths, born August, the 9th, 1759 died May the 21st, 1839, inaugurated the third period, or the Gymnastics of Germany. Bodily exercises were introduced by him into pedagogics.

Fred. Ludwig Jahn, born August the 11th, 1778, died Oct. 15th 1852. It was him who brought gymnastics to full recognition in the instruction for the young; and in 1810 near Berlin, he opened the first out door place for turning. 20. The next person of note is Ernst Eiselen, born 1793, died 1846. In 1818 the Turners having inscribed on their banners: "Fresh, free, pious and jolly" led to opposition from the people. In 1819, all the Turnhalls were closed in Prussia. In 1828 Dr. H. Massmann born 1897, erected a Turnhall at Munich at the expense of the state. Dr. F. W. Klumpp was a warm friend of Turning. J. A. L. Werner, born in 1794 and died in 1866 was furthering turning in the year 1830 in Dresden. In 1842 King Frederick Wilhelm took an interest in the matter and in 1843 the turn-place in Berlin was reopened. 28. Adolph Spiess, born Feb. the third 1810, and died May 1858. His labors are based on those of Gutsmuths and Jahn's. He is the originator of free-exercises, (Frei-Uebungen) especially adapted for school gymnastics.

Since the year 1837 Turning had made an upward move, so that in 1848 there existed in Saxony one hundred and fifty Turning-halls. In 1848 there was erected in Berlin a Central-turning-hall. Dresden erected in 1850 a school for the education of teachers of turning.

The system of Dr. Otto Jager (born 1828) had for its basis military ability. Wrestling, climbing, running, throwing and jumping were principally taught, and in order to increase the exertions the hands were

loaded with iron rods, three feet long and weighing from three to seven pounds. These rods were thought to supplant for all ages the exercises on the parallel bars and the turnpole:

— Of men that were influential in furthering the cause of turning in foreign countrys, Henrik Ling at Stockholm stands preeminent (1776 — 1839.) His system is adapted principally to cure diseases. In Germany it was H. Rothstein and Dr. A. C. Neumann who expounded the system of Ling. Rothstein condemned the turnpole and bar exercises, while E. Du Bois Reymond vindicated them. H. Elias was active in Switzerland. In England Calisthenics are much in vogue. 56. The skeleton of Elias demonstrated the favorable development of the bones in consequence of muscular action. The blood volume and goodness depends on the muscular development. The muscles are kept in a state of contraction by means of nervous vibration which is called muscle-tonus. The human body must be trained to be an organ of the will ready to fulfill its mandates, and not to enslave the will.

Gymnastics divide into: — 1. School gymnastics. 2. Curative gymnastics and Orthopedics. 3. Military gymnastics, and, 4. Athletics. Gymnastics should have for their aim, general and universal usefulness; it is not the fleetness of the deer, nor the strength and unwieldiness of the elephant that is required. Excessive exercise will cause inflammation of the muscles, of the lungs, of the heart, and of the arteries. The muscular tissue becomes stiff and cartilaginous. The violent exercises must be followed by light ones or rest. Supporting the body on the hands and feet is well calculated to develop the chest. The methods are: 1. The employment of weights. 2. Exercising on fixed apparatus. 3. The projection of bodies. 4. Free exercises or the method of quick movements. 5. The method of frequent repetition of movement. This method will render an equivalent for single violent exertion and to be preferred. 6. Wrestling. Faradization will have a similar effect to exercise.

Growth and Decay.

The maturing of a plant is the cause of its decay.

The evolutive power residing in an organism, becomes finally balanced by extraneous impressions and thus growth is arrested. This power we will call the force of organisation and the power adverse to it mineralization. Mineralization is at first a necessity for the organism to give it solidity, but afterwards by gaining the ascendancy over organisation it becomes destructive. It is hence not a malignant entity what causes death but the same thing what gives the body its form and structures. Without proper form no organs could exist hence no functions could be fulfilled. Mineralization makes hence the organs, determines the form. It becomes noxious to the organism when it exceeds the reproductive power of the organism. The evolutive power is generation, the formative power is mineralization. To lengthen life, it would become necessary to retard the generation of the organs, and to keep the mineralization a degree below that, so that the new organic forms could not become clogged with minerals. A lesser form of mineralization is the formation of the cellmembrane, the connective tissue, or cellulose. A tree may grow 2 thousand years, and the cambian layer purifies the sap sufficiently to keep the rest of the tree in a healthy condition. The cambian layer abstracts hence lignin and silica sufficient as not to have the internal woodcells become clogged and killed.— The tendency to mineralization in the organism, could be overcome by the use of citric, acetic and other acids, and by depriving the food of the mineral substances by using chemically pure food and no lime water for drink. The formation of cellulose and lignin could be prevented by a solvent similar to the cuprum ammoniatum which may dissolve silk, of a non poisonous nature constituted from an iron or manganese preparation with ammonia.

Resistances of the body in preventing disease.

To retain or regain health is to have a sufficient degree of invulnerability or resistance to outward impressions. All diseases originate from impressions from without on the resistance within; is that resistance not sufficient then disease is a positive result.

The body must hence be kept in condition, robust enough to resist outside influences. —When the body is delicate, slight influences will be sufficient to produce slight ailments. These slight ailments frequently repeated become chronicity which is a second nature and can never be got rid of except by the surgeons knife, or caustic or might be by acquiring a resistant constitution.

There are as many resistances as there are outside impressions. Every impression can produce only one disease. As the lungs are not sufficiently developed when a person gets out of breath on ascending a flight of stairs, just so the muscular system is not sufficiently developed when fatigue is experienced on slight exertions. As the muscular system may be insufficiently developed to suit the existing outside impressions just so may be undeveloped the Respiratory, the Circulatory, the Digestive and the Cognitive system.

There must be an adaptation of resistances to impressions, if the resistance is greater than necessary there is unnecessary wear and tear. The resistance might be great enough in one clime or under one set of circumstances and not sufficiently resistant in another clime or under other circumstances. What will do for one will not answer for another.

Fever is due to the burning up of mobile materials of the tissues too rapidly, as where they are thrown into the circulation after an injury of some kind. The impression of the burning process or possibly the caloric set free acting on the brain and nerves, takes away the impression

of want upon the stomach from the brain for food and thus the appetite is annihilated.

Muscular force is according to Dr. Falkland the product of the oxidation of carbohydrates and not of the muscular tissue as was formerly supposed. The latter acting as a machine renewing its wear.

Katechismus der makrobiatik.

Von Hermann Klencke.

2te Auflage

1868.

Leipzig, J. J. Weber,

7, The present generation on account of its sickliness was obliged to res to medicine as a short cut to health, it looks upon the Art of medicine as possessing a power similar to that possessed by the Roman priest, granting an indulgence. 8. Hygiene divides into that of the body and that of the soul. 14. In Greece the theatre of natural perfection strength and beauty, its philosophers and especially Hipocrates taught the necessity of daily gymnastics, the enjoyment of fresh air, the bath, friction of the skin, exercise of the muscles and exercise of the mental faculties. From this resulted the art of living or gymnastics of the body and soul, making proof against all external impressions, preventing diseases and being able to heal them if existing. The sick were kept in fresh air, were made to take moderate exercise, and a great deal

was thought of friction applied to the skin. Medicines were reluctantly resorted to. 15. The middle age by its wide spread monastic life by the sensuality of its priests & knights, by its strange philosophy and indolence, became the cradle of the nostrummonger, the charlaton, and the mystic. 16. Bacon, took life to be a process of combustion. 17. The misunderstanding of natural phenomena gave rise to many imposters, and thus arose Mesmerism, Cagliostro's Elixir of life, the heavenly couch, St. Germain's tea miraculous essences etc — The panaceas vended at this day demonstrate the credulity of the people 18. Health can only be maintained by attending to the laws of life. 22. The proper proportion of plasma, and the using up of this plasma with a removal of the remains constitutes perfection in the individual. Cultivated plants and animals are shorter lived than wild ones The longer the period of growth in an animal the longer will be the period of life. A too high degree of solidity is just as bad as sponginess; a mean solidity is best, for long life. 24. The elephant grows up to his 30th year, the crocodile to the end of its life. 25. Life has already in ancient times been compared to a light, what seems to remain the same flame, while still the atoms constituting the same are constantly changing, and in reality such is life minus the flame.

28. The first instinct of vitality is selfpreservation. (Vital force is a heightened condition of natural forces, which in former ages acted spontaneously, but now only under special provocations. Scholl.) 31. Want of light or darkness gives rise to hypochondria, to a want of courage to stupidity. A sunbath is a modern remedy of great power. Every thing must breathe, the smallest plant as well as the most perfect being. In a healthy person there should be 20 respirations to 80 pulsebeats. Each respiration takes in 20 cubic inches of air, 4 inches of this an oxygen the 16 remaining are nitrogen. This

would make 6 pounds of oxygen per day, or over a ton a year. The expired air has lost one fourth of oxygen. A man consumes therefore 1½ lbs. of oxygen daily or 550 pounds yearly. The carbonic acid expired in a year amounts to 750 pounds and contains 200 pounds of carbon, the 550 pounds remaining being oxygen. 36. All organic beings are made up of three fourths of water. Water keeps the blood in a liquid condition, the tissues semisolids, and permeates them as a universal medium, holding nutriment and salts (stimulent) in solution. Water may also be chemically bound to combinations of a solid nature. Chemical action can take place only when the elements are in solution. 38. All the functions of the living body require equal or proportionate, or harmonious developement. 40. Every thing what is calculated to hasten the pulse, the pendulum of life will shorten the hour of existence. 41. Sleep is a necessity to life, all the attempts made to reduce sleep to a minimum of time ended in failure or injury to health, from 5 to 8 hours are necessary. 45. A good stomach is the prime condition for attaining old age, and to keep a good stomach it is essential to have good teeth. Good teeth are also a sign of a good stomach. The second condition is a large and capacious chest with a strong voice, and steady heart. 50. A middle stature is best suited for a long life. 51. The climate exerts a powerful influence on life. The medium highlands of Scotland seem to be best adapted. Temperature ought to be steady or change but gradually. 52. The air should be neither too dry nor too moist. The moist air of valleys, or that of marshes mixed with mouldy exhalations is very unhealthy. If the air is too dry it will abstract the moisture from the skin and lungs, which to replace a certain amount of force is consumed to no benefit. The British isles and Denmark as well as the isles of the Archipelago are well adapted to long life by their moist air. 53. A

mucky formation is injurious on account of its exhalations, a limestone formation seems to be unfavorable to long life on account of the want of moisture in such a formation, (and on account of it impregnating the drinking water with carbonate of lime. Scholl.)

Hilly places are subject to rapid changes of temperature therefore prejudicial to long life. Sweden, Norway, Denmark and England are favorable countries for long life. The east and west Indies Cayenne, Surinum and Abyssinia admit only of a short life. The air of cities being foul and partly used up in connection with the want of proper motion of the individuals gives rise to a mortality double that of country life. 55. To secure long life a certain degree of intellectual culture is absolutely necessary, the cultured man lives longer than the wild man. Demented persons and fools have an animal expression and are moved by instinct, they never become old. A healthy soul enlivens the look, the expression of countenance, the carriage of the body: it inspires its possessor with selfconfidence, hope and hilarity. 56. A sunny and hopeful temper is the greatest preservative of human existence. A man wanting harmony of the soul can not remain long in a healthy condition.— 57. The eruption of the teeth, puberty, its approach and decadence mark periods of evolution and atavism. Some organs die also prematurely, ovulation and potency the falling out of the teeth & hair. Organs will also die away when not in use as the milk gland after lactation, the uterus after confinement. The forces developed in the system are hence no longer sufficient to keep the organs sufficiently nourished after a time. 58. A rejuvenation where a man gets new hair and teeth and becomes robust again are rare, though a man of 120 years of age cut 8 new teeth. The heart of an aged person is smaller, and its consistency much harder (or more fibrous.) (The change or metamorphosis of the tissues is incomplete, that is some of its parts are

easily changed for new material while other parts the fibrous elements is but slowly acted upon and renewed, thus there is an accumulation of fibrous tissue helping to make up the organs, and since this is getting more and more while the muscular tissue is more rapidly exchanged or rather absorbed the same as fat, leaving the fibrous myozena behind, so we can see why fibrous tissue and mineral accumulations load down the system so that it becomes a load to itself and death results. The fat when in large accumulations constitutes a species of decay, the mineral deposit, as well as the fibrous deposit constitute another epoch of decay. Death results from the gradual curtailment of the organs through injury received either from disease or violence. Repeated inflammations of the lungs destroy portions of that organ until finally it is no longer capable of keeping up the aeration of the blood. The stomach having been repeatedly inflamed or ulcerated and the secretive tubules been destroyed so that in the end the digestive function gives way. The bony structures having been crippled by accident lead to absorption of the muscular tissues, and so exercise is made impossible and all the other functions suffer thereby, the heart having less blood to circulate, has some of its muscular elements to spare to be absorbed and there the fibrous elements only remain with but little muscular granular matter, till death takes place. To keep young would be to keep every organ in proper activity and in a proper degree of developement, if an organ gets smaller it requires increased care and exercise and to guard against direct or indirect violence being inflicted upon any organ whatever since the curtailment of any one organ will curtail the functions of all the others. Death therefore is more the result of direct violation done to one or more organs in youth or manhood, at once or in many repeated times. Still there is a change going on in the system what seems to be due to

age and what is probably not explainable to the curtailment of the organs of life. Scholl.)

59. In age the circulating juices becomes poorer and contains earthy salts tending to deposition every where. (Thus a degree of mineralization of the tissue is the result of age; and if this could be prevented by some agent artificially introduced, or formed in that tissue as is the lactic acid then old age might be kept at bay. It may be that since the aged do but little work the lactic acid of the tissues is so little that the limesalt can not be held in solution and carried off by the urine, skin and bowels. Scholl.) Men may be found that are old at 30 or 40 years of age. It has been observed that animals may live to 8 times the period of their growth, hence a man growing 25 years might live to 200 years. (It is assumed that the period of life is 6 times that of growth, thus a horse growing to 5 years, would attain an age of 30 years. Scholl.) The age of man could best be made long, by the cultivation of a healthy race, excluding all diseased parents, so as to secure the purest blood. S.)

The healthiest person is still but relatively healthy, the various organs are constantly receiving Licks and blows which leave a scar and curtailment of organs behind and thus it is that man seldom exceeds the age of 70. 50 per cent die before the tenth year and only 5 or 6 per cent live over 60 years of age. In order to attain old age it is necessary to remove inherited tendencies to disease, to prevent the occurrence of accidents or diseases, to economize life, to look to a proper restoration of the organs by means of diet and to harmonize body and soul. (Hardening the system to outside influences is a process of getting used to an impression and is to be compared to getting used to smoking, drinking, swallowing opium or arsenic; getting used to these poisons is a process of hardening the stomach and brain the same way as subjecting oneself to cold repeatedly until the body gets used

to it, now as the use of tobacco or alcohol has its bad effects on the constitution so we must conclude that the less hardening a body stands in need of to shield him against change of temperature the better it will be for him in the end; the same may hold good in regard to excessive muscular developement. All excesses of whatever nature that are removed from the golden mean either up or down will prove injurious to life. Scholl.)

Our resistance to outward impressions warding off disease resides in the first instance in the nervous system, if the latter is debilitated then the causes of diseases find root easily enough, and to a balance of temper, that is, not feeling any provocation even if something vexatious should present, perceiving it by the mind and acting accordingly without having the feelings or emotions come into play; hence suppressing the feelings and acting by the powers of the mind, perceiving and acting. If you are at table and a body wants something do not get irritated, either let him wait or tend on him good naturedly; when a person provokes you by acting sulky, awkward, ill natured, animous etc. do not let these impressions come to your feelings but let them go no farther than the brain which perceives the fact, if you hear evil omens, sad catastrophies, and fire, let them stay short of being recieved in to the feelings, such a process of hardening, that of exclusion of depressing influences, of fear and anger would indeed be a great step towards preserving health and long life. **Equability** of temper, of exercise, of thought, satiety and warmth are the great conditions of long life. S.)

65. Nitrogeneous food, demands activity to bind up new tissues, thus the humor is exceedingly active; while non-nitrogenous food has to be taken in larger quantities und predispose to inactivity and sleep. The nitrogenous food leaves the system after having been used in the building up of the tissues (or having been present in the blood at least,) as urea of which 130 grammes are ex-

creted, containing 20 grammes of nitrogen; the carbonaceous food leaves the system as carbonic acid and others wherein the carbon amounts to 310 grammes, which would equal five sixths of a pound of carbon and one sixth of a pound of nitrogen for 24 hours. Too much nitrogen in the circulation may dispose to gout and gravel, too much carbon, to hemorrhoids, scrofula and hypochondriasis. 67. A sedentary person consumes for every pound weight in 24 hours 1 gramme (15 grains) of nitrogen and 2 grammes (30 grs.) of carbon. 68. There is a difference between indisposition and disease. If the human organism is capable of establishing the harmony of the various systems of the human body, as by sweating, Coriza, or diarrhoea after a cold, then the trouble is called an indisposition; if however the body is too much debilitated so that it is unable to react or only partially so, then disease will be the consequence.

(The two however differ more in degree than in kind, and in disease the same metamorphosis of tissue, building up and tearing down, are going on, but in an exalted degree, possibly so far want of nervous control from the inhibitory nerves. S.) The gravid condition is favorable to the removal of lime from the system and the use of lemons or citric acid, has demonstrated itself to be of certain result in such cases. The placental circulation, has a great effect in building up the rest of the body. The same result may be attained by increasing the muscular tissues by exercise, the increased quantity of blood harbored in the system have also a happy secondary effect upon all the other organs, if we could hence keep on hand a more extensive circulation, we could indirectly secure the better nutrition of all the other tissues, this we can do by having the skin in an active condition, and the muscular tissue well developed hence exercise and friction of the skin will secure the same as the placental circulation. 74. Children from intemperate parents

are generally weak and stupid. 77. Milk must be free from epithelial cells and mucous corpuscles. 78. The infant should not be nursed immediately after meals. 82. A suitable food for infants is made by mixing arrowroot, the white of eggs and milk into a dough, pressing the same through a sieve, then drying and pulverizing the vermicelli, and using a teaspoonful of this powder boiled with water and some milk. The infant should be bathed daily for the first year and should be carried for the first few months on a pillow to guard the soft bones. 87. The grown up child should be encouraged to judicious and supervised gymnastics to develop the muscles, which as is well known does not only strengthen the body but the mind as well.

(The development of the muscles increases the systemic blood, but hypertrophy of the liver, and enlargement of the abdomen increases the portal blood, which portal blood may also act as a reservoir of power. The increase of the portal circulation induces in the course of the system circulation, since the blood is not used for making muscle, a deposition of fat about the heart and within the muscles, causing obesity. If the portal circulation is too small the body will be but poorly nourished. Scholl.) 93. The worm wrinkle commences at the top of the wing of the nose and terminates at the outer edge of the sphincter of the mouth. The suspicious wrinkle commences at the internal canthus of the eye and terminates in the neighborhood of the highest point of the lower jaw. 103. Sugar left in the mouth passes readily into lactic acid, which attacks the teeth, and when the enamel is once broken through, the straight canals of the dentine carry the fluids of the mouth to the pulp inflaming the same, tooth ache and loss of the tooth are the result. Meat contains about 75 per cent of water. The flesh of chickens has 5 times as much creatin according to Chevreul as beef; to it may be due the

different tastes of meat.

Beeftea ought to be made cold and contains then all digestible ingredients contained in the meat. $\frac{1}{2}$ lb. of chopped meat is macerated with water and 6 drops of muriatic acid for $1\frac{1}{2}$ hours. By boiling, the principal nutrient ingredients become coagulated in the meat, while the soup contains a good deal of gelatine, on this account **Liebig's extract** does not amount to much. 106. Stall fed animals have generally diseased livers and lungs and should not be eaten. 108. The Pulse family furnish a food with a large quantity of legumin or vegetable caseine, are therefore very nourishing. 109. Eating between meals is a very bad habit. 111. While the mind is excited, or loaded with grief, eating is highly prejudicial, so is mental or bodily labor immediately after meals. Pleasurable conversation assists digestion. 113. Wine bibbers never get old, while persons that did get old never drank a drop of it. Milk when fresh and raw is digestible by every stomach, a little salt will add to its degree of digestibility, if it constipates, add sugar to it.

114. Coffee induces in the stomach and intestinal canal a more lively movement, removes the feeling of fatigue and the condition of drunkenness. The teaplant is also a poisonous plant. Black tea has some of the poisonous juice removed by heating on hot metal plates while it is being prepared from the green leapes. Green tea retains most of this poisonous juice.

117. **Bathing and friction** are necessities for every man in order to remain well. The head neck breast and arms should be washed in cold water every morning, and once a week before going to bed in a warm room should the body be washed all over with cold water, and then the body should be well rubbed with a coarse towel. A warm bath with soap and water should be used once a week the year round. **The vapor bath** should not be used when there are tendencies to congestions, especially

cerebral congestion. Since all extraordinary excitements are prejudicial to health they should not be repeated too often; and never after meals or fatigue. 121. The roman baths are hot air baths. 122. The person bathes in his own sweat, and since the blood has to supply the sweat with water it has to draw upon the lymph vessels itself and the bath becomes thus useful in catarrhs, serofula, dropsy, rheumatism and neuralgia.

Hair. Metallic solution or Alcoholic preparations for the hair, kill the roots of the hair, resulting in greyness and baldness. The hair must not be done up tight since a stretching of it will result in bald patches. **Clothing** must be adapted to season, place and occupation. The coats of men leave the body cold, and expose the chest to the influence of cold. The dresses of women leave the neck and breast unprotected. The clothing should not be too warm. The wearing of a cap in the house or at night is to be especially avoided. The neck must be only lightly protected, muffling up will give rise to inflammation of the eyes and throat. 128. Flannel keeps the temperature of the skin higher when dry; when wet with sweat the latter is rapidly evaporated and thus keeps the skin cool; the exhalations of the skin are hence facilitated. 132. **Intellectual labor** should be interrupted whenever the head becomes affected, the chest moving with difficulty or the stomach feeling oppressed. A walk up and down the room or in the fresh air should be resorted to. 132. The health of the various parts of the body demand that one part is not constantly or for a considerable time exercised or subjected to pressure. Thus, standing labor predisposes to varices of the legs, sitting long as watch makers to congestions of the intestines or hemorrhage, kneeling predisposes to affections of the kneejoint. The labor should therefore in the time of recreation exercise such muscles as have been flung aside during labor, and allow rest to the fatigued muscles.

Sleep. The best time for sleep is at night, and the hours preceding and following midnight are most valuable. (When I get woke up at 1 A. M. my sleep is soundest then, and it is the hardest time for me to get up. It is very likely that in those hours from 11 to 2 the most sleep is got through with, the sleep is of a concentrated nature at that time. S.) The rising hour in winter should be 6 o'clock and in summer 5 o'clock A. M. Carry no cares to bed with you, after watching a night, it is still best to get up at the proper hour. (Getting up too late will also bring about a derangement of the meal hours and cause fullness and oppression of the stomach with flatulence. The stomach may not secrete the gastric juice so readily at irregular hours when food is introduced, thus the food is more apt to ferment, causing a feeling of fullness up to the throat, and a sensation as if the food had not been masticated fine enough. The secretion of the gastric juice may be under the influence of periodical nervous action. Scholl.)

This nervous periodicity may also be of weight in regard to sleep the same as it is with food. S.) 137. **Occupations.** Furnace men, on account of being subjected to great heat, are subject to neuralgia, liver affections, colds and ophthalmia. Fishermen, subjected to great cold, get rheumatism. 138. Workers in dust are liable to a species of consumption. Chimney sweeps are liable to cancer of the scrotum. 141. Arsenic will cause depression at the stomach and a want of appetite. 144. Phosphor necrosis is apt to result when a tooth is in a decayed condition. 146. **City life** makes persons egoistical and pedantish with no relish for the enjoyments of nature. The air of cities is very impure.

154. **Tobacco.** (Persons Habituated to the use of tobacco have an appetite for it, the same as for food, and the want of an appetite for tobacco is a sure sign of disease in them, and the return of the appetite a sign of cural-

essence. When a person has once become habituated to this as well as to any other poison, then being under the influence of the poison represents the normal condition, just the same as a person being under the influence of well digested nutrient food is the normal condition. The nerves, the secretory organs and the alimentary canal, feel the want of its influence.— The nicotin remains in the socket of the pipe, but the nicotianin being of the nature of camphor is volatile, passes along with the smoke and imparts the peculiar smell of tobacco smoke to clothes. The unconsumed carbon is prejudicial to the lungs. S.)

158. The smoke from cigars contains far more nicotianin than that from the poorest pipe. 159. Havana and Maryland have 2per cent of Nicotin and Nicotianin, Kentucky 5per cent, Virginia and French 6 — 8per cent. 165. Company with our fellow beings stimulates body and soul to a higher evolution. 166. Diatetics of the soul comprise, peace of mind or equability of temper. Philantropic, Veracity, Morality and sociableness. 175. Migrations. Persons with disease of the heart and lungs can seldom become acclimated to a warm climate. For the **aged** riding in a carriage and friction of the skin is of special importance, and some oil rubbed on the skin to keep it warm and supple. 182. Predisposition to disease. Every body should study his predisposition to disease, the one will be especially liable to lung affections, another one to diseases of the stomach etc. 183. Persons having a tendency to Consumption, should avoid, running, dancing and excesses of all kinds, also the dry air of heated rooms and make use of light gymnastics. 186. Persons predisposed to gout should avoid meat and wine since uric acid is of a nitrogenous nature. 188. It is great nonsense for people to be bled or cupped at stated periods of the year, the same holds good with regard to taking pills. If you do not feel well eat nothing or only very little, but drink plenty of fluids and go to bed; if

you are not relieved in 24 hours time call a physician.

190. Choosing a physician assure yourself that he is no ignoramus nor a rogue.

191. Hufeland says: "One physician is better than two, and two is better than three." The more physicians the less likely is the recovery. 192. To guard against accidents, cultivate presence of mind, courage, and selfreliance. 193. In drowned persons attempt the induction of vomiting by tickling the fauces. 195. A frozen person cover all over with snow. 197. In cases of poisoning administer milk and oil alternately as much as can be swallowed, so as to induce vomiting and washing out of the stomach. If the poisoning is by arsenic give the hydrated sesquioxide of iron, if by corrosive sublimate, the whites of eggs, if by phosphorous, calcined magnesia, if by Aqua ammonia give sweet oil, if by vegetable alkaloids, solution of tannin are indicated, if by the salts of silver, chloride of soda. **Contagion.** To guard against contagious diseases avoid eating in a sickroom, and do not enter it with an empty stomach. After touching a sick person wash your hands. Scratches on the hands are very dangerous; and the saliva should not be swallowed but spit away. To guard against trichiniasis eat no pork that has not been microscopically examined. Farcy contracted from diseased horses lead slowly to death. **House remedies.** Rhamnus frangula, syrup of buckthorn is an excellent cathartic.

The
New Gymnastics
 for
Men, Women and Children.

By
 Dio. Lewis, A. M., M. D.

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8. The new gymnastics have a centrifugal effect upon the blood current while the old German had a centripetal effect. The main principal is to intermarry muscle and nerve, to bring about a complete interaction between body and soul. Both sexes are admitted to its practice and it has the assistance of music. 12. Beanbags, Dumbbells, Wands and Rings are used. 16. Half a pint of cheap molasses put to a pail full of water for mopping will prevent the floors getting dusty. The hall should have a temperature of 65 degrees. 19. Dumbbells of wood should be $3\frac{1}{2}$ inches thick. Rings should be made of 3 pieces of wood one inch thick, 6 inches in diameter. A wand should be 4 feet long 1 inch thick. Clubs should be 20 inches long and 4 inches thick. 20. Free Gymnastics are carried out independent of apparatus. 21. Unloaded exercises have a centripetal tendency.

74. Dumbbells should weigh from 2 to 5 lbs. if used under varying exercises, but if only to be put up and down again they may be heavier. 75. A man has 500

muscles, large and small and of all possible attachments and direction, hence requiring a variety of movements. a small weight lifted often will have the same effect as a heavy weight lifted once. Kloss.) 76. The model gymnast should be strong, enduring, graceful, agile and flexible. 80. Moving heavy weights will not cultivate accuracy. 82. Vitality is not like a vault of gold on which you cannot draw without lessening the quantity, but rather like the mind and heart, enlarging by action and gaining the expenditure. 83. Big muscle men appreciate nothing but size, but there are other conditions of brain and muscles that are of more importance. 84. **Altitude and Movement.**

127. Ring exercises have something fascinating in them and are well suited to act on the extensors as well as on the flexors. 152. The muscles of the shoulder joints diverge in all directions like a fan. 171. The Indian club is well calculated to remedy a stooping position. **Percussion.** 201. There are few weaknesses within that are not improved or cured by percussion. Percussing the pit of the stomach is useful in dyspepsia. A New York dyspepsia doctor made a fortune. 202. The soreness of muscles arising from exercise is removed by percussion. 207. Mutual help exercises. The persons active or passive. 234. Shoes. Stand on a piece of paper in your stocking, draw a line about the foot and have the shoemaker make the sole of that size. 235. Working too hard in the gymnasium is losing game. 236. A bathing mat can be made by sewing a piece of rope to some India rubber cloth. 238. It matters not when food is taken if the regular hour is observed. While eating, drink nothing at all. 239. If you are fat, take less food not heeding the kind. 241. If you are lean drink a few tumblers full of water, going to bed and rising in the morning and eat pretty generously. 242. **Bacon.** The good of a man's body is health, beauty,

strength, and pleasure. 245. Gymnastics were first cultivated in Greece. The Greek education was divided into gymnastics and music, or the science over which the nine muses presided, such as history, poetry, mathematics, painting, logic, rhetoric, sculpture, architecture and asthaetics. Among the romans gymnastics never became naturalized, but remained an unprosperous exotic to expire in the final wreck of the State. The lost art was again brought to light with the dawn of Chivalry but in an altered garb. It assumed the form of wrestling, fencing, boxing, vaulting, sword exercise, horsemanship and the dance.

249. With the decline of chivalry it fell more and more into disuse. In the year 1561 J. F. Scaliger wrote "The art of gymnastics." 1540 Sir Nicholas Bacon wrote on Physical Education. 252. John Locke says: "Men's happiness or misery is most part of their own making." 253. Our Modern school education practically ignores the body. 255. The word "Education" should be made to embrace physical as well as mental education. 261. The main principal of the new gymnastics is embraced in the mechanical law of Momentum. Momentum is made up of two factors: weight and velocity. Allowing momentum to stand for a permanent quantity; the greater the velocity the less the weight, and conversely the greater the weight the less velocity is required. By moving a light weight quickly through the air, as much force is consumed as by lifting a heavy weight slowly: The new gymnastics give prominence to velocity rather than weight. 262. A man may develope a fine shell of muscle at the expense of the vital system.

263. Heeman when defeated by Sayer went into the fight with far more muscular than vital power, he soon felt faint and breathed with difficulty. His poor health may be ascribed to the severity of his training. 264. Many a fine fellow at Cambrige and Oxford trains

for a boat race and gains heart disease. The New System discards the **Acrobatic** principle. (Muscular contractions take place under the influence of the will. There are hence two elements in a muscular contraction, muscle and brain, and if the lifting power of muscular contraction is in the ratio of the mass, the velocity of the contractions is in the ratio of cerebral power. Velocity of motion will hence increase cerebral action, while slowness of motion or great muscular developement by not stimulating the brain sufficiently will blunt and debilitate the brain power. Leanness of the body if combined with health, argue brainpower and velocity of action, fatness argues a weak brain with dulness of action. Vitality is however different from brain power, vitality is a condition, what secures a similar condition yet to come. If the body is trained to running, then all the wheels of the human machinery are made to move in harmony with that object to be attained, and the vitality will not give out, as if no training had taken place; although the brain power would remain the same. This bending of all the wheels of the system to one purpose will prematurely wear out the parts and the final vitality or the length of life will be curtailed. S.)

The eyesight is best cared for, not using it too near, and for objects so as to preserve the power of accommodation.
